AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

MEMORANDUM August 8, 1988

TO: Distribution

FROM: ANE/PD/SA, Grant Morrill

SUBJECT: Pakistan: Private Sector Power (PSP) (391-0494)
Project Committee Meeting - PP

A Project Committee meeting to review the subject document will be held on Friday, August 12, 1988 at 1:30 p.m. in Room 4440 N.S. We have blocked out three hours for the meeting.

Your participation is invited.

Attachment:
PSP Project Paper

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AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE A (A = Add, C = Change, D = Delete) — Amendment Number

DOCUMENT CODE 3

2. COUNTRY/ENTITY Islamic Republic of Pakistan

3. PROJECT NUMBER 391-0494

4. BUREAU/OFFICE Asia and Near East (ANE) 04

5. PROJECT TITLE (maximum 40 characters) Private Sector Power (PSP) Project

6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM 09 DD 30 YY 98

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 88 B. Quarter 4 C. Final FY 94

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(9,000)	(-)	(9,000)	(1,118,847)	(51,153)	(170,000
(Loan)	(-)	(-)	(-)	(-)	(-)	(-
Other U.S. 1. Private Sector				787,000	518,000	1,305,000
Other U.S. 2.						
Host Country					13,571	13,571
Other Donor(s)				430,000		430,000
TOTALS	9,000	-	9,000	1,335,847	582,724	1,918,571

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) ES	740	811							
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 820 840

11. SECONDARY PURPOSE CO

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BR	BL	BF	BU	BWM		
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

The project purpose is to mobilize private sector resources to finance, own and operate power plants. It is intended that the project create a self-sustaining fund able to serve as a catalyst for international donors, the private sector and GOP, and eventually as a link between the private sector and GOP and lenders on private world debt markets who would replace the donors.

14. SCHEDULED EVALUATIONS

Interim MM 06 YY 91 MM 09 YY 93 Final MM 09 YY 97

15. SOURCE/ORIGIN OF GOODS AND SERVICES

XX 000 XX 941 ☐ Local ☐ Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment.)

1. TDJohnston, C/E&E:
2. RWNachtrieb, C/PDM:
3. PDavis, C/PRO:
4. TBCarter, C/RLA:
5. FAWill, C/CC:
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17. APPROVED BY

Signature

Title: James A. Norris, Director

Date Signed: MM 08 DD 04 YY 88

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AGENCY FOR INTERNATIONAL DEVELOPMENT

DEPARTMENT OF STATE

WASHINGTON, DC 20523

PROJECT PAPER
PAKISTAN - PRIVATE SECTOR POWER
391-0494

AUGUST 4, 1988

UNCLASSIFIED

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LIST OF ABBREVIATIONS AND ACRONYMS

ADB	-	Asian Development Bank
ADP	-	Annual Development Plan
ANPAC	-	Asia Near East Project Advisory Committee
CDSS	-	Country Development Strategy Statement
CIDA	-	Canadian International Development Agency
CMC	-	Coal Mining Cell of the MPNR
CY	-	Calendar Year (January 1 - December 31)
DFI	-	Development Finance Institution
E&E	-	Office of Energy and Environment of USAID
EAD	-	Economic Affairs Division
ECC	-	Economic Coordination Committee
ERR	-	Economic Rate of Return
ESF	-	Economic Support Funds
EW	-	Energy Wing of the Planning Commission
FAR	-	Federal Acquisition Regulations
FBC	-	Fluidized Bed Combustion
FERC	-	Federal Energy Regulatory Commission
FSN	-	Foreign Service National
FX	-	Foreign Exchange
Fund	-	The Fund is a multi-donor financing window in NDFC which will provide up to 30% of the total cost of private sector power sub-projects.
FY	-	Fiscal Year (October 1 - September 30)
GOP	-	Government of Pakistan
Gwh	-	Gigawatt-hours
HB	-	Handbook
IA	-	Implementation Agreement
ICI	-	Intermediate Credit Institution
IERR	-	Internal Economic Rate of Return
IQC	-	Indefinite Quantity Contract
KESC	-	Karachi Electric Supply Company
Kwh	-	Kilowatt-hour
LOI	-	Letter of Intent
LRMC	-	Long-Run Marginal Cost
MPNR	-	Ministry of Petroleum and Natural Resources
MW	-	Megawatt
MWP	-	Ministry of Water and Power
NDFC	-	National Development Finance Corporation
NPV	-	Net Present Value
ODA	-	Overseas Development Agency of U.K.
OECF	-	Overseas Economic Cooperation Fund of Japan
PACD	-	Project Assistance Completion Date
PC	-	Project Coordinator
PED	-	Private Energy Division within NDFC
PIL	-	Project Implementation Letter
PIO/C	-	Project Implementation Order/Commodities

PON	-	Program Opportunity Notice
PPA	-	Power Purchase Agreement
PPC	-	Private Power Cell
PSP	-	Private Sector Power
PUC	-	Public Utility Commission
PURPA	-	Public Utility Regulatory Policy Act
TA	-	Technical Assistance
TDP	-	Trade and Development Program
USAID	-	United States Agency for International Development
USDH	-	United States Direct Hire
WAPDA	-	Water and Power Development Authority
WB	-	World Bank
WPPC	-	WAPDA Private Power Cell

CURRENCY EQUIVALENTS

1 Rupee = 100 Paisa
1 Rupee = US $ 0.0571
Rs 17.50 = US $ 1

I. Summary and Recommendations

A. Recommendations

1. Funding

USAID/Pakistan recommends an ESF grant of $170 million for the Private Sector Power (PSP) Project with a Project Assistance Completion Date (PACD) of September 30, 1998.

2. Geographic Code

Goods and services financed by A.I.D. under this Project shall have their source and origin in countries included in A.I.D. Geographic Code 000 or Pakistan.

3. Waiver Requests and Determinations

USAID/Pakistan requests that the GC and M/SER/AAM obtain a determination by the AA/ANE that the full application of the Cargo Preference Act is not practical with regard to the project. A draft action memorandum for AA/ANE is contained in Annex F, Mission Director's Certifications and AA/ANE Determinations.

B. Summary Description

The proposed project is the culmination of many years of donor-GOP policy dialogue on the need to increase the role of the private sector (PS) in generating Pakistan's electricity. The GOP has recognized the need to include the PS if the shortfall in power generation is to be overcome. Relevant ministries are reviewing over 13 proposals to provide from five to 1200 MW of power from a variety of fuels, at a variety of sites, and from a variety of different domestic and international groups. The project is designed to help Pakistan develop an efficient and effective method of integrating PS power generation into the national power sector. The intention is to help achieve Seventh Plan (1988-93) objectives and lead to the possibility of even bigger PS involvement during the Eighth Plan.

USAID's PSP project is expected to form part of a multi-donor project, under World Bank leadership, entitled "Private Sector Energy Development Project". The multi-donor project provides for financing stand alone resource development subprojects such as coal mines; the USAID project will only consider such subprojects if they are dedicated to a PS power plant, and proposed as a combined subproject. The wider project envisages almost $1.9 billion in financing: $150 million from the World Bank, $450 million from other multilateral and bilateral donors (including the $170 million from USAID), $430 million in PS equity and about $875 million in PS loans from local and foreign commercial credit sources and suppliers' credits. The USAID PSP project has been designed to stand alone and operate in the absence of any other donor

contribution. The description and analyses in this Project Paper, although coordinated with and consistent with the Bank project, are of the USAID project. Detailed material on the Bank's multi-donor project can be found in the World Bank's Staff Appraisal Report (#7226-PAK) of June 6, 1988 (Annex I).

The major anticipated output of the project is additional electricity. The USAID project is expected to provide at least 400 MW; the ambitions of the wider project are for up to 2,300 additional MW. This output will help to meet the project goal to promote socio-economic development in Pakistan through increased electricity generation. The purpose of the project is to mobilize private sector resources to finance, own and operate power plants.

USAID's project will finance three components. The first is a four year institutional development effort requiring up to $20.562 million. The project will finance technical assistance, training and commodities to strengthen the staff of the institutions responsible for the GOP's review and approval of private sector proposals, and operation of the Fund described below. This TA will be available to support the entire multi-donor project, not just the USAID activity; any funds in the project TA budget in excess of needs may be reprogrammed to the Fund.

The second component will consist of a $125 million contribution to establish the Energy Development Fund to be administered by the National Development Finance Corporation (NDFC). The Fund will cover up to 30% of the total cost of PS subprojects. The onlending interest rate to eligible private sector entities will be the prevailing market rate in Pakistan, currently 14%. If this changed, it will only be with the approval of USAID and the World Bank. This includes a fee to cover foreign exchange risk. The repayment terms will be up to 23 years including eight years' grace. The multi-donor project envisages contributions from the World Bank, Japan, ODA, Italy and USAID. The Asian Development Bank, CIDA and West Germany have also expressed interest in supporting the fund.

The third component provides $16.957 million for financing special studies in support of the development of private sector power generation in Pakistan and for financial support for US and Pakistani firms submitting proposals to supply electricity to the GOP. In addition, about $1.773 million will be used to fund Mission management support, evaluations and audits.

C. Summary Findings

This project is ready for implementation and is socially, financially, economically sound and administratively and technically feasible.

D. Project Checklist and Mission Director's Certifications

The project meets all applicable statutory criteria.

Appropriate check lists are included in Annex D.

Two certifications signed by the USAID/Pakistan Mission Director are included in Annex F. They are an FAA 611(e) Certification and an FAA 612(b) Certification.

E. ANPAC Concerns and Design Guidelines

The concerns and design guidelines which were raised at the ANPAC review of the PID (see Annex A) are addressed in Annex B.

II. Background

A. U.S. - GOP Negotiations

USAID and other donors have been discussing the need for PS involvement in the power sector with the GOP for several years. First results came in 1983 when the GOP approved the inclusion of PS power investments in the Sixth Five-Year Energy Sector Development Plan. In August 1985 the GOP issued a policy statement followed by a solicitation for PS power investment proposals, developed with USAID funded technical assistance.

In December 1987, the GOP formally approved the concept of a multi-donor Private Sector Power Project which was to include a World Bank initiated $550 million Energy Development Fund to be administered by the National Development Finance Corporation (NDFC).

The project described in this Project Paper is supportive of the WB initiated Fund, and represents the result of intensive consultations with the Bank, other donors, and the GOP.

B. The Need for Private Power Generation

Power is critical to sustain economic growth in Pakistan. During the 1980's, real GDP grew slightly less than 7 percent per year. This growth resulted in a constantly increasing demand for power, now estimated to exceed 11 percent per year. For the past eight years the power system has been unable to meet demand. Widespread load shedding has resulted and is expected to continue for many years. A recent A.I.D. study estimated that in 1985 load shedding reduced industrial value-added by 8.8 percent, equivalent to an annual loss of $350 million.

There are many reasons why Pakistan's power supply is inadequate. Political problems have delayed the development of major hydel projects that could supply substantial MWs at least cost. The present rate structure cannot support the necessary investment levels. The changing price of fuels has made various thermal plants too expensive to justify in the short term. Most importantly, the level of investment required to finance the needed plants exceeds the resources of the GOP and its energy donors. Private sector money will be required.

The potential market for private power is large. By 1993 Pakistan will need approximately 6,000 MW of additional power, requiring investments of about US $6 billion. The Water and Power Development Authority (WAPDA) will probably be able to self-finance only 40 percent of its investment program. In the past, donors have provided about 45 percent of energy sector investment needs, but the GOP would like to reduce this percentage and use donor resources in other sectors. The power sector already absorbs 29 percent of the total Annual Development Plan, and energy sector allocations are greater than health, housing, education, agriculture, and population planning combined. The PS could supply as much as 4,000 MW of the additional power needed during the Seventh and Eighth Five Year Plans (1988-98).

C. Private Sector Power in Pakistan and Worldwide

The power sector in Pakistan was developed by private companies during the colonial era, but the last two major private power companies were nationalized in the early seventies. Today, WAPDA, a semi-autonomous government agency, has responsibility for supplying power to all areas of the country except Karachi, which is served by the Karachi Electric Supply Corporation (KESC). Majority ownership in KESC is held by the government. In 1987, WAPDA and KESC served 5.6 million customers delivering about 32,000 gigawatt-hours with a peak demand of almost 5,500 MW (1,200 MW of this had to be "shed" due to lack of capacity). There are no other significant suppliers of power to the general public, but because of inadequacies in the public power system, many industrial companies have installed small generators, typically of 1 to 5 MW.

Private power experiences in other developing countries are still embryonic. In China, two coal fired units of 350 MW each have been in operation since 1985. TATA's power plant in Bombay is another example. Policies or projects are being considered in Turkey, India, Indonesia, the Dominican Republic, the Philippines, Thailand, and China. While none of these has entered the construction phase, a 1,000 MW coal-fired project in Turkey is the closest to implementation. Bids have been solicited and received and the winning proposers have been selected. The ANE and S&T Bureaus have been in contact with Turkish officials and with U.S. proposers to develop "lessons learned" to apply in Pakistan.

The WB's assessment of the potential role of the PS in Pakistan's Energy Sector, can be found in the Bank Staff Appraisal Report (SAR) in Annex I.

D. Early Private Sector Proposals

Since the GOP announced the Private Power Policy in 1985, 13 proposals--ranging from 5 MW hydro units to 100 MW coal projects to 1,200 MW oil units--have been received. Those under active consideration by the GOP are described briefly below. Any or none may become potential borrowers from the Energy Development Fund. Their inclusion here is to illustrate the activities of the GOP, the interest of the PS, and the variety of potential subprojects.

1. Hub Chowki: The First Private Sector Power Proposal: In 1986, the GOP published an advertisement requesting proposals for a 120 MW diesel power plant at Hub Chowki near Karachi. USAID provided consultants to help with the evaluation of the fourteen proposals received. A letter of intent was issued to FECTO on July 12, 1988.

2. Lakhra Coal (100 MW): In February 1987, Habibullah Mines, in collaboration with Siemens of West Germany, submitted a proposal for a 100 MW coal-fired plant at Lakhra. Power from the Lakhra plant was offered at 86.5 paisa(about 5 cents) per kwh for the first 12 years and 62 paisa(about 3.5 cents) per kwh for the next 13 years. In response, the GOP issued its first LOI, which expired on May 11, 1988. Habibullah was unable to arrange financing for this project at the agreed upon electricity price before the expiration date of the LOI.

3. Quetta Coal (30 MW): In February 1987, Habibullah Mines, in collaboration with Siemens of West Germany, submitted a second proposal for a 30 MW plant at Quetta. Power from the Quetta plant was offered at 93 paisa(about 5.3 cents) per kwh for the first 12 years and 62 paisa (about 3.5 cents) per kwh for the next 13 years. The GOP's LOI for the 100 MW Lakhra Coal Plant also covered this 30 MW plant at Quetta. It seems likely this plant will also be canceled by the GOP because Habibullah has been unable to arrange financing for their project at the agreed upon electricity price.

4. Lakhra Coal (120 MW): Pakland, Pyropower and Bechtel submitted a proposal in February 1987 to build a 120 MW fluidized bed combustion power plant at Lakhra. This proposal offered a price of 96 paisa(about 5.5 cents) per kwh. The Pakland, Pyropower and Bechtel proposal is now being actively considered by the GOP, and an LOI may be issued in the near future.

5. Xenel (1200 MW): The Xenel proposal for a 600 MW oil-fired power plant was received in October 1986 from a Saudi firm. Another similar proposal was received from Hawker Siddeley Power Engineering Limited of the United Kingdom. Later, both firms agreed to construct and operate their plants as a single 1200 MW furnace oil-fired facility. The plant would be located at the mouth of the Hub River, near Karachi. On April 27, 1988, following ECC approval, an LOI was issued for this 1,200 MW Project. The LOI was accepted by Xenel on May 26, 1988.

6. Others: USAID knows of at least four co-generation proposals at a fairly advanced stage. There are also good prospects for private sector plants using Sonda Thatta coal, a larger and better quality coal seam that has been identified by USAID's Energy Planning and Development Project 391-0478.

E. Institutional Setting

Management of the energy sector in the GOP is complex. The

following description is taken from the World Bank's Staff Appraisal Report:

Four ministries share the responsibility for the energy sector: the Ministry of Petroleum and Natural Resources (MPNR), the Ministry of Water and Power (MWP), the Ministry of Production (MOP), and the Ministry of Planning and Development (MPD). Coordination is provided by the Energy Wing of MPD, which acts as a secretariat for the National Energy Policy Committee (NEPC) and Energy Review Group (ERG). NEPC is responsible for the formulation of GOP's overall energy policy. Review of investment plans and approval of energy pricing proposals is under the jurisdiction of the Economic Coordination Committee (ECC). The Executive Committee of the National Economic Council (ECNEC) and the Central Development Working Party (CDWP) review and approve major proposals and projects in all sectors, including energy.

The day-to-day management of operations in the energy sector is vested in a number of public and private sector entities. The public sector entities are: the Water and Power Development Authority (WAPDA), which is responsible for developing Pakistan's water resources and for the construction, operation and maintenance of power generation, transmission and distribution facilities throughout the country, except the Karachi area; the Oil and Gas Development Corporation (OGDC) for exploration and development of oil and gas; the Pakistan Mineral Development Corporation (PMDC) for the exploration and development of mineral resources; the State Petroleum Refinery and Petrochemical Corporation (PERAC) and the National Refinery Limited (NRL) for processing crude oil; and the National Petroleum Limited (NPL) for a proposed hydrocracker project. Also involved in the energy sector are a number of semi-autonomous entities in which the Government has, either directly or through public institutions, a controlling interest. These are: Karachi Electric Supply Corporation (KESC), which is responsible for the construction, operation and maintenance of generation facilities, as well as the transmission and distribution for electricity supply in the Karachi area; Sui Northern Gas Pipelines Limited (SNGPL) and Sui Southern Gas Corporation (SSGC) for the transmission and distribution of natural gas; and the Pakistan State Oil Limited (PSO) for marketing and distribution of petroleum products. The private sector (PS) entities include: a large number of Pakistani coal mining companies; two refineries, the Attock Refinery Limited (ARL) and Pakistan Refinery Limited (PRL); and five oil and gas development companies namely, Pakistan Petroleum Limited (PPL), Pakistan Oilfields Limited (POL), the Fauji Foundation, Union Texas and Occidental Petroleum Limited.

As shown in the organization chart on the following page, all operational entities (public and semi-autonomous) are under the jurisdiction of MPNR, except for WAPDA, KESC, NRL and PRL. MWP has jurisdiction over WAPDA and KESC, and the Ministry of Production over NRL and NPL.

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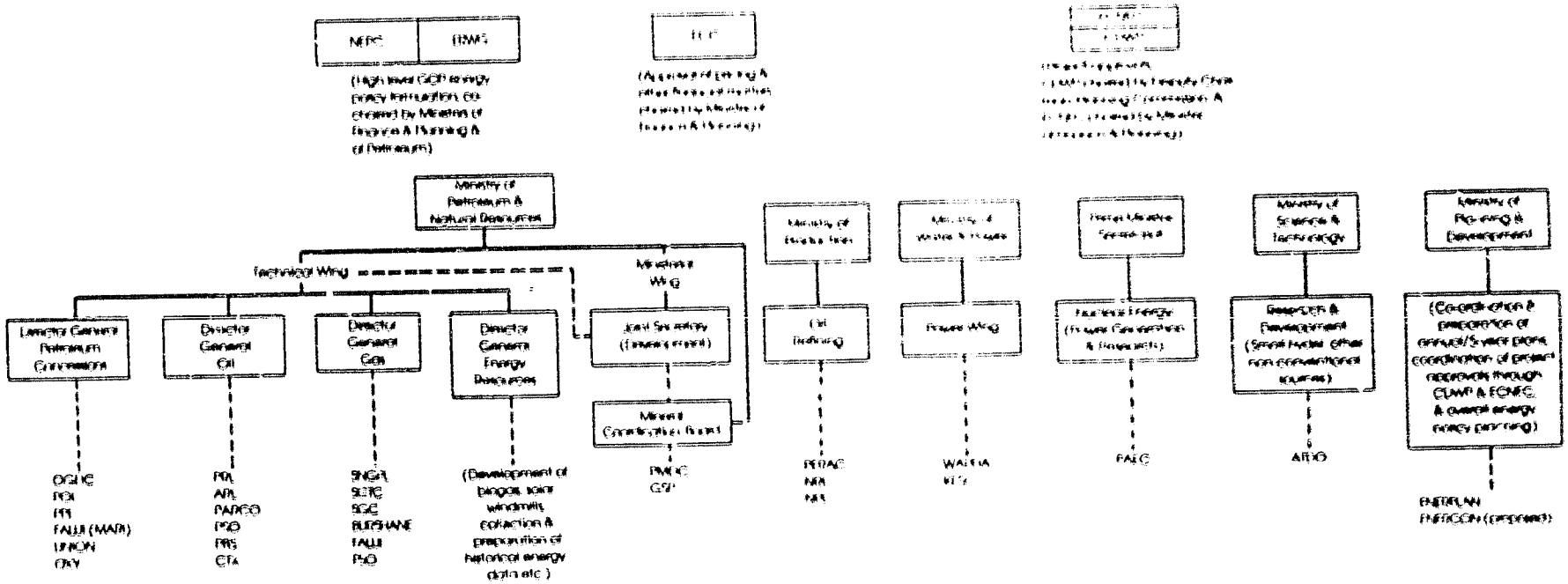
PAKISTAN

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

Organization Chart



Legend

NEPC = National Energy Policy Committee
EWG = Energy Review Working Group
ECC = Cabinet's Economic Coordination Committee
ECNEC = Executive Committee of the National Economic Council
CDWP = Central Development Working Party
OGDC = Oil & Gas Development Corporation
POL = Pakistan Oilfields Ltd
PPL = Pakistan Petroleum Ltd
FAUJI = Fauji Foundation
UNION = Union Texas Co. of USA

OXY = Occidental Co. of USA
PMDC = Pakistan Mineral Development Corporation
GSP = Geological Survey of Pakistan
PRL = Pakistan Refinery Ltd
APL = Attock Refinery Ltd
PARCO = Pak Arab Refining Co
PSO = Pakistan State Oil Co. Ltd
PRS = Pakistan Burmah Shell
CTX = Coltex of USA
SNGPL = Sui Northern Gas Pipelines Ltd
SGTC = Sui Gas Transmission Co. Ltd
SGC = Southern Gas Company

BURSHANE = Subsidiary of Burmah & Shell Oil
PEDAC = State Petroleum Refining & Petrochemical Corp
NRL = National Refinery Ltd
NPL = National Petroleum Ltd. (for proposed Hydro cracker)
WAPDA = Water & Power Development Authority
KESC = Karachi Electric Supply Corporation
PAEC = Pakistan Atomic Energy Commission
ARDO = Appropriate Technology Development Organization
ENERLAN = Energy Planning & Development
ENERCON = Energy Conservation Centre

F. Current Proposal Review Methods

In reviewing PS proposals, the GOP has developed an ad hoc review system on which the Private Sector Power Project will build. This system is described below:

1. First Phase: Four Steps to a Letter of Intent

a. Proposals are received by the Ministry of Water and Power (MWP) and reviewed by the Additional Secretary for Power, who also sends them to WAPDA (or KESC) for detailed technical review.

b. Within WAPDA, the Private Sector Cell (PSC) undertakes this review. The PSC is made up of staff for whom this work is additional to their ordinary duties and thus is onerous and secondary. The PSC produces an evaluation, including a calculation of costs under a scenario in which WAPDA would own and operate the plant. Review within KESC is carried out by the Chief Engineer, also as an additional duty. The PSC will form the basis of the WAPDA Private Power Cell (WPPC) to be created by the project.

c. If positive, the MWP sends its recommendations to the ECC to approve the issuance of a LOI. Prior to submission to the ECC, the MWP also coordinates its recommendation for approval with any other involved Ministries (e.g., Planning Commission, Finance, Petroleum and Natural Resources, etc.).

d. The ECC then announces its decision.

Experience with the first proposals suggests these steps can take as little as six months (Habibullah Mines) or more than 26 months (Pakland). These are, however, teething times; once a system has been established, it should be possible to get a LOI within four to six months.

2. Second Phase: Three Steps to a Power Purchase Agreement (PPA) */

An LOI gives proposers a fixed period of time (typically six to nine months) to confirm the feasibility of their proposals, determine project costs and obtain financing. When this has been done, the sponsor must pass the following three additional steps as conditions for obtaining a PPA:

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*/ The World Bank staff appraisal report refers to Energy Purchase Agreements (EPAs). The principal difference is that the World Bank plans to finance resource development activities such as coal mines, natural gas, and oil fields. By contrast, USAID is interested primarily in power generation. Any resource development activities considered by USAID for financing would be part of an overall power generation subproject.

a. The revised proposal is submitted to the MWP and WAPDA.

b. The proposer enters into final negotiations with WAPDA (or KESC) on the details of the PPA.

c. Once the PPA is negotiated, it must be reviewed and approved by the ECC. The ECC may delegate approval authority for any subsequent proposals with identical PPAs to the MWP.

Although no proposal has yet gone beyond the LOI stage, USAID estimates the last three steps might require three to six months.

USAID expects the first Power Purchase Agreement (PPA) to be negotiated with Xenel. Considering that it will probably take five months after acceptance of the LOI (which was in late May, 1988) to finalize the proposal, three weeks for agreement on the scope of the feasibility study, and four months to negotiate a PPA, it is conceivable the Xenel project might be given a "go" in March 1989. More likely it will take longer, because this is a very large project and the first of its kind. The Pakland and Hub Chowki projects could receive an LOI in the fall of 1988 which would allow for project starts as early as the summer of 1989. If these proposals continue to move forward, they will be the most likely first three applicants to the Fund. The extent to which AID funds would be appropriate for these proposals is not known. It appears that any request from Xenel would be limited to financing for Pakistani inputs; US goods and services are not expected to form part of the Xenel package.

G. Relationship to GOP Strategy and to AID Strategy

As discussed in more detail in the WB Analysis (Annex I), private sector participation in power generation is a clearly defined GOP policy and substantial progress has been made in its implementation. The Seventh Five-Year Plan(1988-1993) calls for 1,330 MW to 2,330 MW of private sector power by 1993.

The Private Sector Power Project is fully consistent with the key objectives of USAID/Pakistan's Country Development Strategy Statement (CDSS) and the draft Energy Sector Strategy, prepared by the Office of Energy & Environment in May 1988. Policy and institutional reforms, support for the private sector, and donor coordination are all integral to the draft strategy, this project, and the CDSS. A specific CDSS objective is to have at least one private sector plant in operation by 1993. The Project represents an important opportunity to strengthen the role of free enterprise in a country with a legacy of regulatory and bureaucratic barriers and lost investor confidence. The Project is supportive of AID's overall development strategy and is directly related to the four pillars of policy reform, technology transfer, institution building, and private sector development.

H. Relationship to Other Donor Programs

The USAID Project is part of the multi-donor Private Sector Energy Development Program being developed by the WB. This Program is expected to receive support from the WB, USAID, ODA, the Japanese government, and other donors. In addition, the WB's Investment Finance Corporation and the ADB's Private Sector Division are prepared to offer commercial credit to firms and to take equity positions in privately owned power plants. Each donor will have its own project agreement with the GOP to provide funds for a common credit facility.

I. Project Rationale

Pakistan needs more electrical energy than it is able to produce. Widespread load shedding with its detrimental effects on economic growth will continue beyond the 1990's unless remedial action is taken. The GOP cannot provide the magnitude of resources needed to expand national capacity from its donors or its budget.

The most optimistic USAID estimate of development funds available to WAPDA in the Seventh Plan period is Rs 16 billion(about $900 million) per year. This level will not eliminate load shedding. A successful energy conservation and load management program will help, but an annual private sector investment of approximately $500 million will also be needed to eliminate load shedding. Private sector investment is therefore a necessary condition for closing the demand/supply gap.

As a major energy donor with a strong interest in private sector and institutional development, USAID is well suited to play a key role in a multi-donor private sector program. It was USAID's initiative that led to the GOP's adoption of the private power policy and the GOP is now developing the administrative structure necessary for implementation. With the first proposals under active consideration, the timing of the project is ideal.

The U.S. utility industry and regulatory bodies are preeminent in the world in integrating public and private power systems. In addition, U.S industry has a competitive advantage in a number of power technologies such as gas turbines, fluidized bed combustion systems, gas fired combined cycle systems, biomass power systems and photovoltaic systems. While not the major rationale for the Project, trade and investment interests of U.S. industry are also likely to benefit from this project.

III. Detailed Project Description

A. Project Goal and Purpose

The project goal is to promote socio-economic development in Pakistan through increased electricity generation. The project purpose is to mobilize private sector resources to finance, own, and operate

power plants. It is intended that the project create a self-sustaining fund that is able to serve as a catalyst for international donors, the PS and the GOP, and eventually as a link between the PS and GOP and lenders on private world debt markets who would replace the donors.

B. Project Outputs

1. AID Project Achievements

a. AID project funds of $125 million will be contributed to an Energy Development Fund and will leverage $290 million of private and public sector resources resulting in the provision of over 400 MW of power. The $125 million would be roughly sufficient to finance 30% of the total cost of four 100 MW proposals, but proposals are likely to vary considerably in size. Also, a given subproject may involve borrowing from different donor contributions; the AID contribution will only be available for US and Pakistani goods and services. The AID contribution, therefore, could help finance part of as many as 15 PS power subprojects.

b. The Fund will be administered by a semi-autonomous Private Energy Division (PED) to be established within NDFC to review, approve and provide financing for energy sector subprojects. The NDFC is regarded by AID as an Intermediate Credit Institution (ICI). At the end of the project, this Division will be capable of continuing the Fund independently as a separate ICI, if it is so decided by the GOP and the donors.

c. WAPDA will have the capability to integrate private and public sector generation and distribution activities. The Coal Power Projects Department of WAPDA will have a strengthened capacity to review mining proposals. WAPDA will assist MWP identify, approve and issue RFPs for PS plants for at least seven potential sites by December 31, 1993.

d. The Ministry of Water and Power's (MWP) capabilities to plan, analyze, and evaluate private power subprojects will be strengthened through the creation of a Private Power Cell (PPC) attached to the Office of the Additional Secretary (Power). The PPC will obtain approval of PPAs for at least five subprojects by December 31, 1993.

e. USAID funding of up to $10 million will be lent to fund part of the development costs of at least three ventures.

f. The GOP will examine the feasibility of establishing one or more private electricity distribution companies.

g. Fifty private and public sector Pakistani professional and management personnel, essential for implementing private power, will be provided training.

h. Pakistani private sector personnel will participate in USAID financed seminars, field trips and investment missions to gain a

better understanding of U.S. technologies, goods and services with potential applications in Pakistan, joint venture arrangements and preparation of feasibility studies and negotiation of PPAs.

i. A self-sustaining system to allow continuing inputs by the PS into power generation will be in place and functioning.

2. Multi-donor Project Achievements

Assuming that all donors participate as planned, multi-donor project funds in excess of $500 million will leverage private resources totaling at least an additional $1.3 billion for energy sector investments resulting in an additional 1,800 MW of power.

C. Project Components/Activities

The proposed project will assist the GOP to mobilize resources for cofinancing PS investments in power development to contribute to the achievement of the objectives of the Seventh and Eighth Plans. It will also establish an institutional framework to sustain PS investment and operation in the energy sector.

The project has three components. The first is a four year institutional development component that provides training, technical assistance and commodities to the entities that approve PS proposals and to the intermediate credit institution which will administer the multi-donor Energy Development Fund. The second component consists of a $125 million contribution to the Fund. The third consists of $16.957 million, to finance special studies in PS participation in energy, to provide financial support for US and Pakistani companies to encourage their participation, and to support the Mission's management of the project.

1. Component 1: Institution Building

At the request of the GOP and the World Bank, USAID proposes to finance the institutional development activities associated with the multi-donor Private Sector Power project. The following three institutions will be strengthened:

- The Private Power Cell (PPC) of the Ministry of Water and Power (MWP)

- The Private Energy Division (PED) of the National Development Finance Corporation (NDFC)

- The WAPDA Private Power Cell (WPPC)

In addition, two institutions created by AID's Energy Planning and Development Project will have a significant role in the implementation of the project and will receive limited short term technical assistance and training from the Private Sector Power Project. These institutions are:

- The Energy Wing (EW) of the Planning Commission
- The Coal Power Projects Department of WAPDA (WCPP)

The roles these institutions will play are described in the following section.

a. Inputs

The inputs each institution will receive are summarized below:

i. Private Power Cell (PPC)

Long Term Expat TA: 48 pm of a policy planning specialist;

Short Term Expat TA: 28 pm for policy planning and 76 pm for subproject appraisal;

Commodities: About $581,900 for computers, office equipment, and vehicles;

Training: About 24 pm of short courses and OJT;

Long Term Pakistani Personnel: Up to 225 pm professional staff and 180 pm support staff as needed.

ii. Private Energy Division (PED)

Long Term Expat TA: 24 pm for a utility finance specialist, and 48 pm for a power engineering advisor;

Short Term Expat TA: 62 pm of financial and technical expertise to assist in subproject appraisal;

Commodities: Almost $950,000 for office equipment, computers, and vehicles;

Training: About 30 pm of short courses and OJT;

iii. WAPDA Private Power Cell (WPPC)

Long Term Expat TA: 48 pm of a power engineer/utility specialist;

Short Term Expat TA: 59 pm for preparation of standard PPAs, determining price of power, evaluating proposals and negotiating contracts;

Commodities: About $240,000 for office equipment, computers, and vehicles;

Training: About 15 pm of short courses/OJT.

iv. Energy Wing (EW)

Short Term Expat TA: Up to 18 pm for financial and economic aspects of power systems expansion;

Training: Approximately 6 months of short courses and OJT.

v. WAPDA Coal Power Projects Department (WCPP)

Short Term Expat TA: Up to 30 pm for assistance to review private sector coal mining proposals; may include geologists, surface and underground mining technology specialists, mining economists and financial specialists.

The PSP budget also includes funds for up to an additional 18 pm of short term expatriate technical assistance that could be made available to provincial governments for assistance in the review of PS mining proposals.

Short term expatriate technical assistance to help the GOP appraise proposals with coal mining elements may also be provided to a Coal Mining Cell (CMC) in the Ministry of Petroleum and Natural Resources. The establishment of this Cell is a precondition for disbursement of the World Bank loan. USAID had been asked to help build this new institution, but has declined, since the AID project is focused on power, and not energy. Another donor, perhaps ODA, may be interested in financing this portion of the Bank's project. If the Cell is created and has responsibility for appraising private sector proposals with mining elements, USAID could finance technical assistance from the total 30 person months of mining expertise included in the budget.

Similarly, should the Energy Wing find it needs coal mining expertise, it could be made available from

the AID project budget.

b. Institutional Roles

i. Private Power Cell (PPC)

The implementation of GOP's policy of increasing PS involvement in the power subsector is the responsibility of the Secretary of MWP, assisted by the Additional Secretary for Power. The Secretary and his directors are qualified and competent administrators; however, they are not adequately supported by experienced staff. A Private Power Cell (PPC) in the MWP is needed.

The PPC will consist of a Director General and approximately five professional staff. If needed to facilitate its speedy establishment, salaries and other recurrent costs may be paid by AID for the first two years of the project, after which they will be paid by the GOP. The expectation is that initially the staff will be hired on contract. The GOP will then permanently hire those who have proved the most competent.

The Director General will be a qualified engineer with experience in the management of power utilities with special emphasis on system operation, power supply contracts, and supervision of projects. He will be assisted by two power engineers with experience in the operation of power systems, appraisal of power projects, and contract management. The Cell will also require two financial specialists with experience in project finance, financial management of power utilities and the development of computer-based financial models. The PPC Director General will be the chief USAID counterpart for project implementation.

The GOP will recruit the required professionals. The adequate staffing of these entities is a precondition for disbursement of the World Bank Loan.

The PPC will receive the assistance of specialized consultants in the review and evaluation of proposals and negotiations of agreements, as noted in a. above. The staff of PPC will also receive training in the review of PS proposals, development of software for evaluation and financial analysis, and use of export credits and commercial financing, particularly under limited recourse arrangements.

Once fully staffed, the PPC will (1) recommend policy changes to the ECC to improve the ability of the private sector to contribute to Pakistan's needs for electric power; (2) coordinate the activities of GOP agencies (WAPDA, KESC, NDFC, the Energy Wing (EW) of the Ministry of Planning, and others) to obtain timely, effective approval of private sector power agreements; (3) identify private power projects which are consistent with the GOP's least cost expansion plan for the national power system; (4) develop, in cooperation with WAPDA, economic analyses of the costs of electric power from public sector and private sector sources; (5) review model PPAs developed by WAPDA for purchasing power from the private

sector; (6) develop model LOIs and other documents for contracting between the GOP and private sector entities for the supply of power; (7) develop, with the assistance of WAPDA, Calls for Proposals for power generation facilities located at specified sites; (8) issue Calls for Proposals on behalf of the GOP and receive both solicited and unsolicited proposals; (9) evaluate proposals (with assistance from WAPDA, NDFC, EW, and others as required) and issue LOIs to proposers; (10) monitor the performance of private sector power suppliers and WAPDA/KESC in accordance with the PPAs and LOIs, during both construction and operating phases; (11) resolve differences between private firms and WAPDA; and (12) disseminate information on power investment opportunities to the private sector through seminars and publications.

ii. WAPDA Private Power Cell (WPPC)

The commissioning of a number of privately owned power plants will raise complex issues for WAPDA regarding load dispatching, compensation, penalties for failure to perform, etc. WAPDA has no single group responsible for coordination of the operation of privately owned power plants and for negotiation of long-term power purchase agreements. As the contractual and technical aspects of the operation of a PS power plant will involve coordination with a number of groups in WAPDA, e.g. load dispatch, system operation, finance, system planning, etc., there is a need for a WAPDA Private Power Cell (WPPC) to negotiate and administer power purchase agreements and coordinate the operation of privately owned power plants within WAPDA's system. WPPC should be headed by either an engineer or a finance specialist reporting directly to Member, Power. The head of the WPPC should be assisted by a power engineer with experience in power system operation, load dispatch, commercial aspects of bulk power transfers, and a financial analyst with experience in financial management of power utilities. WAPDA will be responsible for WPPC staff salaries. The Bank has made the adequate staffing of the WPPC a precondition for disbursement of their loan.

Although WAPDA has the engineering expertise in the areas of system operation, power plant design, etc., it has no experience in reviewing, negotiating and administering long-term power purchase agreements and coordinating the operation of public and privately-owned plants. WPPC will, therefore, need consultants' services to support and train its staff. This will consist of a long term Power Engineer/Utilities Specialist for four years and almost 60 pm of short term technical assistance to help in the preparation of PPA, evaluating proposals and negotiating contracts. In addition, 15 pm of short course training in the US will be available to WPPC staff.

Once fully staffed and equipped, the WPPC will (1) define technical criteria and terms for system interconnections to protect grid integrity, accommodate dispatching, and take into account the need for load shedding and/or voltage and frequency variations; (2) assist the PPC to develop detailed Calls for Proposals for private power subprojects; (3) assist the PPC to evaluate private power proposals, including calculating WAPDA

avoided costs; (4) recommend power purchase contract terms to the PPC, based on agreed upon tariff policies, non-performance penalties and capacity factors; (5) estimate the costs of infrastructure to connect proposed private power stations with the national grid; (6) negotiate and recommend for approval PPAs with private power suppliers, based on LOIs issued by the PPC; (7) authorize payment to private power operators based on measured delivery of power and adherence to contract terms; and (8) advise WAPDA on ways to adjust retail tariffs consistent with the purchase of private power for approval by the Economic Committee of the Cabinet.

iii. Energy Wing (EW)

The Energy Wing (EW) of the Planning Commission is currently supported by the Energy Analysis and Manpower Development component of the AID-funded Energy Planning and Development Project (391-0478). The EW prepares the energy sections of the five-year national development plans and reviews each ministry's annual development plans and budgets with respect to overall national goals, resources and policies. EW is also responsible for independent analysis, appraisal and coordination of all public sector energy projects, and is the secretariat for the Energy Review Group headed by the Minister of Planning, or, in his absence, the Deputy Chairman of the Planning Commission. Limited short term technical assistance and training will be given to enable the EW to play its role in facilitating private sector power.

Specifically, the EW will (1) ensure that PS proposals are consistent with economically justified power expansion needs, national policy objectives and budgetary constraints; (2) recommend policy changes to promote expansion of private power and identify the effect such policies may have on achievement of national goals; and (3) review major private power proposals, as requested by the PPC and the Minister for Planning or the Deputy Chairman, Planning Commission, to ensure proposed subprojects are consistent with national plans and macro-economic considerations.

iv. Private Energy Division (PED)

In view of the size of the projected portfolio of the Fund, there could be merit in setting it as an independent public or private financial institution. However, it is estimated that the creation of a new institution would require at least two years because of the extensive work needed to outline the future role of the Fund, sources of financing for its future operations, financial performance criteria and guidelines for operations, and staffing. If PS investments were held in abeyance for this period they would be jeopardized. The Fund, therefore, will be established immediately as a functional unit of an existing financial institution.

The GOP has designated NDFC to administer the Fund. The Fund's operations will be structured to allow for detachment from NDFC, and the development of the Fund will be implemented in stages. The first stage

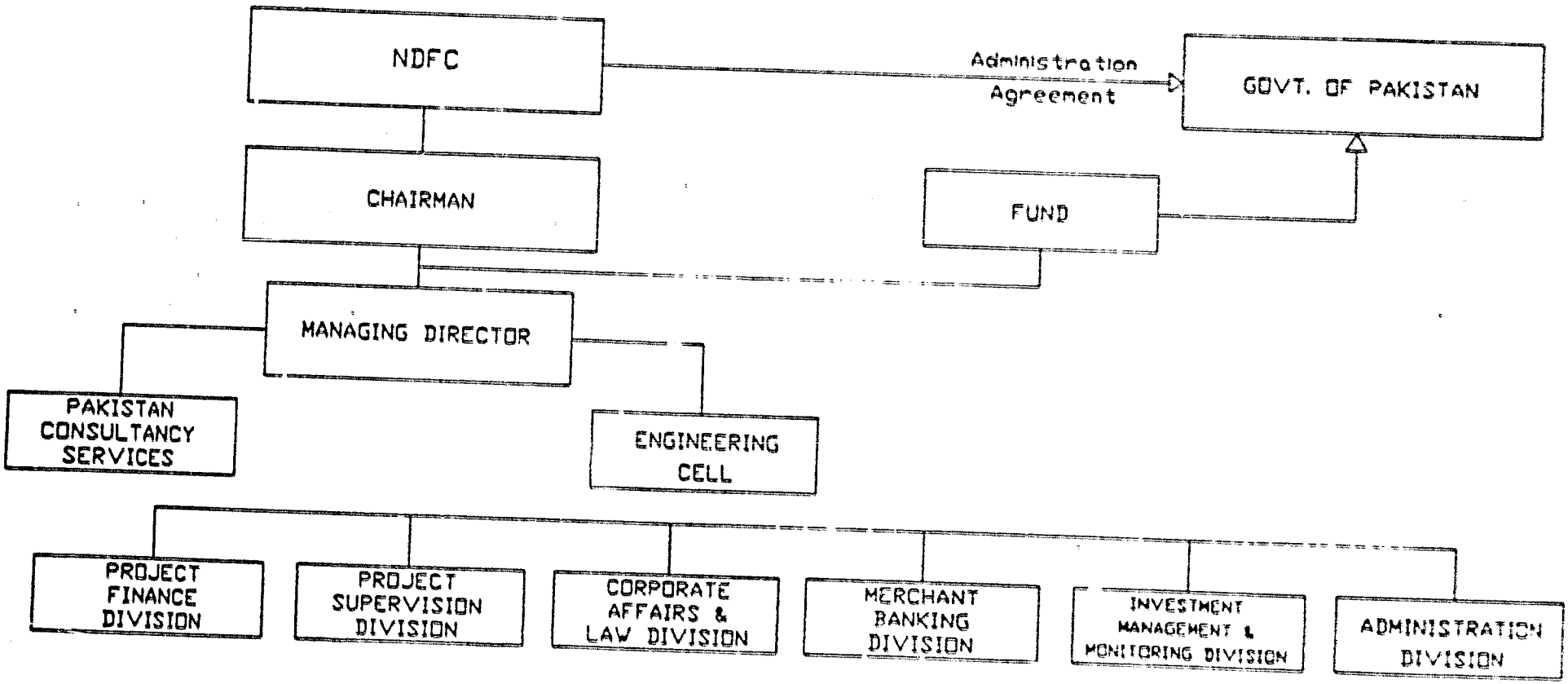
will cover the establishment of the Division, the recruitment of core staff and the appointment of consultants to support the operations during the first few years. The second stage will involve the recruitment of consultants to design the organizational structure for the Fund, prepare operations manuals, and staffing strategy. The third stage will cover a study by the consultants to assess the feasibility of establishing the Fund as an autonomous finance institution. AID will finance the consultants for the first stage. AID or the WB may fund the later stages.

The Fund will be administered by the Private Energy Division (PED) to be created in NDFC. The relationship between the NDFC Board of Directors, PED and the Fund is presented in the chart on the following page. The terms and conditions under which NDFC will manage the Fund will be set out in an administrative agreement between GOP and NDFC. The manager of PED will be at the level of senior executive vice president/deputy managing director. He will report directly to the Chairman. He will be supported by an executive vice president and two senior vice presidents with proven expertise in the areas of engineering and finance. The executive vice president will supervise and coordinate the functions of the senior vice presidents for finance and engineering. The senior vice president for engineering will be responsible for the technical appraisal and supervision of subproject implementation. The senior vice president for finance will be responsible for the financial appraisal of subprojects, assessment of the adequacy of financial plans and review of the SPs, and supervision. The senior vice president for engineering will be supported by three engineers with experience in power generation and coal mining, a specialist in contract management and procurement and an environmental specialist. The senior vice president for finance will be supported by two finance specialists. The proposed staffing for PED, which represents the core team, will be supported by consulting firms and financial advisors with expertise in project appraisal, engineering and supervision, and in investment banking. AID will finance these technical consultants.

PAKISTAN

Private Sector Energy Development Project

Relationship Between NDFC and the Fund



Once fully staffed and supported with consultants, the PED will (1) appraise subprojects to determine economic and financial viability and assess the management, financial, technical and marketing elements of proposals; (2) review legal documents and contracts for purchase of plant and machinery and for acquisition of technical services and PPAs; (3) open letters of credit in local and foreign currency and arrange foreign currency loans from supplier countries and the international market; (4) arrange loan syndication and assist with loan restructuring, acquisition and merger proposals; (5) help facilitate lease financing, joint ventures and venture capital financing; (6) monitor the construction of power plants financed by subprojects to ensure that all subprojects remain on schedule and within budget; (7) prescribe formats to be submitted by sponsors as the basis for release of funds and authorize release of funds; (8) monitor subproject performance once production has begun; (9) manage debt servicing; and (10) manage the Fund's private sector power portfolio as a whole and monitor areas of financial exposure.

At the end of the project, the expectation is that the PED will be able to start replacing donor inputs with loans from the commercial world markets, and syndicating debt with PS sources as needed. The Mission anticipates that the ten project years will be long enough to convince the world markets that private sector power in Pakistan is a worthwhile investment.

c. Outputs

The objective of Component 1 is to establish a mechanism to allow the efficient and thorough appraisal of proposals leading to the issuance of letters of intent to qualified proposers, the thorough and fair negotiation of power purchase agreements, the effective granting of loans to eligible borrowers and the monitoring of subprojects. Such a system is deemed by the GOP and the design team as a necessary, but not sufficient condition for the successful introduction of the PS into Pakistan's energy sector. A second essential element is credit, which forms the core of Component 2.

2. Component 2: Private Sector Energy Development Fund

The heart of the USAID and multi-donor projects is the establishment of the PS Energy Development Fund. The Fund will exist to provide up to 30% of the financing for PS energy projects under a build-own-operate-transfer (BOOT) arrangement. The PS will be invited to build, own and operate power plants, and, possibly transfer the plant to the Government of Pakistan or other owners.*/

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*/ Contrary to inferences drawn from a reading of the World Bank SAR, "BOOT" has not been adopted by the GOP as policy or standard operating procedure for Private Sector Power. We were informed by the MWP that BOOT is a feature of only the Xenel project. The terms applicable to each project will be worked out and agreed on in the implementation agreements between the PS companies and WAPDA. USAID will urge that any transfer will be at fair market value.

The Fund will fill a gap in PS financing, essential to project success; the terms and conditions of the Fund are discussed below. An additional essential element of the project is the set of criteria, measures, provisions and agreements that need to be in place to safeguard the interests of the PS, the donors, and the GOP. The GOP and donors have agreed that the World Bank should develop a framework for this set of procedures, which is referred to as the Security Package (SP). This main SP will serve as the basis for negotiated subproject-specific SPs. The Bank's proposals for the SP are outlined at Section f. below. The institutions that USAID will be strengthening in Component I will play key roles in developing, negotiating, implementing and supervising the elements of the SP.

a. Fund Contributions

The World Bank is the lead sponsor for the Fund, but USAID's $125 million grant contribution can stand alone, in the absence of other donor contributions. The Bank expects contributions of at least $520 million, as shown in the table below:

Proposed Terms and Conditions of Fund Financing

Source	Amount US$ Million	Weight	Interest Rate (%)	Exchange Rate Insurance Premium (%)	Overall Interest Rate (%)	Repayment Period (Years)/b
Loans						
Bank	146	0.28	7.72	3.25	10.97	20 (5)
Japan	150	0.29	5.30	7.00	12.30	23 (8)
ODA	49	0.09	5.50	3.00	8.00	30 (10)
Italy	50	0.10	3.00	3.00	6.00	30 (10)
Canada	30		5.20	3.25	8.45	30 (1)
Grants						
USAID	125	0.24	-	-	-	
Total	550	1.00			7.85 /a	

/a Weighted average for overall interest rate
/b Includes grace period, shown in parentheses.

Source: World Bank Staff Appraisal Report

Other donors, including the ADB and West Germany have also expressed interest in contributing to the fund.

The Fund's onlending interest rate for subprojects will be the prevailing rate on foreign loans to industrial enterprises, and GOP's loans to most energy entities, currently 14 percent. The onlending interest rate will cover the cost of borrowing, the cost of operations and allow for the accumulation of reserves.

The onlending rate of interest for each subloan will be fixed. The repayment period for onlending the Fund's resources will be up to 23 years. This repayment period corresponds with the expected economic life of energy subprojects. Fund subloans will have a grace period of up to eight years to facilitate the completion of long gestation projects such as hydel plants, and the repayment of export credits and commercial loans which have normal repayment periods of eight years, including grace.

The Bank has estimated the sources and applications of funds to the Fund, which allows the Fund to accumulate over $225 million over the 10 year life of the project (1988-98) to be the equity capital for future activities by the PED of the NDFC, or, preferably, its autonomous offspring, without the need for allocations from GOP's budget. Assuming a 5:1 debt/equity ratio (conservative for NDFC), this would enable the Fund to mobilize an additional $200 million each year to finance energy projects in the Eighth Plan.

More details on the terms and conditions for operating the Fund are given in the World Bank Staff Appraisal Report. The SAR discusses appraisal and supervision of subprojects, procurement, disbursements, environmental and social issues and reporting and accounting issues, summarized below.

b. Eligible Borrowers

A minimum condition for eligibility will be receipt of a Letter of Intent from the GOP. Before a loan is approved, the proposal must be reviewed for its engineering and cost aspects. The PED and the USAID-financed consultants will appraise each proposal. The engineering consultants and staff will review: (i) suitability of site; (ii) availability of inputs; (iii) appropriateness of, and proven experience with technology offered; (iv) project design; (v) arrangements of detailed engineering; (vi) construction strategy; (vii) cost estimates; (viii) procurement arrangements; (ix) arrangements for project operation and maintenance; and (x) compliance with Bank's environmental guidelines and resettlement requirements, and submit a comprehensive assessment of the technical feasibility of the subproject. The financial advisors will review: (i) adequacy of financing package; (ii) financial viability of the project over its life under various tariff scenarios; (iii) the security package, (discussed below) and (iv) corporate structure. Based on the consultants' report, the Fund will prepare a comprehensive appraisal report with recommendations.

USAID does not intend to undertake a review in addition to that made by the PED and its consultants. Such a donor approval would relieve the Fund of at least some of its risk burden. USAID therefore intends to limit its review to monitoring the review process only; this will not prolong the review process since it will be concurrent with the PED review. USAID reserves full rights to audit subborrowers and to track funds.

c. Procurement

AID funds will be used to finance procurement from the US and Pakistan. Other donors, notably ODA and Italy will make their funds available for procurement from their respective countries. Japan's contribution will likely be untied, and like the Bank's contribution, procurement will be in accordance with Bank guidelines, and contracts awarded through International Competitive Bidding (ICB). Borrowers using tied funds must follow procurement procedures acceptable to the relevant country. AID procedures are spelled out in Section IV.c.2.

In the event the lowest evaluated bidder under ICB is from a country offering tied aid, the contract, to the extent of available financing, will be financed by the tied aid in the Fund, supplemented by funds provided by Japan and the World Bank. To oversee this allocation, the GOP has asked the World Bank to coordinate all procurement on behalf of all the contributors to the Fund; the Bank will therefore review all award recommendations and send relevant award recommendations to the tied aid agency. To minimize the time required for procurement, borrowers will have the option of prequalifying equipment suppliers prior to the appraisal of subprojects. The conditions for this prequalification, which are acceptable to AID, are spelled out in WB Staff Appraisal Report No. 7226-PAK included as Annex I.

d. Environmental and Social Guidelines

USAID and other donors are concerned about the possible environmental and social impacts of subprojects. AID and WB are preparing guidelines which will be included in a brochure, to be published by the GOP, giving the social and environmental guidelines for PS power projects. The brochure will discuss critical environmental factors to be reviewed and monitored, permissible pollutant levels, principal control methods, treatment and disposal of gaseous, liquid and solid wastes, occupational health and safety standards, planning standards for rehabilitation in the case of involuntary resettlement, and procedures for implementing and monitoring rehabilitation plans. Before issuing an LOI for projects which may have significant environmental and social impact, the GOP (with help from the project TAT) will carry out a preliminary environmental/social screening to assess the site and technology alternatives. Proposers will be required to submit an environmental and social impact assessment for the subproject. These documents will be submitted to the Bank for review along with the Fund's recommendations.

USAID will finance an expatriate environmental expert as part of the TAT initially short term, to be converted to long term if needed. This person will ensure that proposals are in compliance with appropriate environmental and social guidelines. For details on the environmentalist see Section IV.C.1. and Annex O. The environmental and social impact of the USAID project is discussed in Section V.C. and Annex T.

e. Reporting and Accounting

The donors will collaborate a corron reporting package. This will require a quarterly progress report on Fund operations including the use of each donor's funds, annual financial statements audited by an independent auditor acceptable to all donors and a Project Completion Report within six months after the completion of the 10 year project. The reporting package will also include a quarterly progress report and annual audited financial statements for each subproject. A Project Completion Report will be required for each subproject. The PED will be responsible for the reporting package.

f. Security Package

The GOP's objective in encouraging PS investments is to shift the burden of investment to the PS and away from the treasury. Sovereign guarantees for loans assumed by the PS will therefore not be provided, since this would increase the GOP debt burden. Instead of sovereign guarantees, the GOP will establish an institutional framework for the PS and provide incentives for donors and Fund borrowers to consider investment in PS power projects.

The framework of the Security Package has four elements: (i) incentives to PS to undertake investments with limited recourse financing; (ii) the eligibility criteria for PS investments to be considered by GOP and the Fund which will safeguard the interests of donors and the Government; (iii) provisions to minimize the impact on borrowers and GOP of identified risks that could occur in the process of preparation, implementation and operation of PS subprojects; and (iv) donor roles in subproject formulation, appraisal and supervision.

These are excerpted below from the WB SAR.

i. Incentives to the Private Sector

(a) Price for the Purchase of Electricity

This price will provide an incentive for the PS to implement and operate subprojects efficiently. This will not be a cost plus arrangement, but a fixed price per kilowatt-hour for a given year, with future adjustments to be made only to accommodate specific changes in input prices such as labor, fuel, costs of spares, and not to ensure any particular rate of return on equity. The return on investment could be increased by greater efficiency reducing costs or yielding an output

beyond the contracted level. Correspondingly, it could be decreased by inefficiency on the part of the owner.

(b) Fiscal Incentives

The GOP has reduced import duties and taxes on electrical and mining equipment to allow the PS to offer electricity at attractive prices. Special areas and localities have been declared industrial zones with tax holidays of up to five years. Moreover, the GOP has decided to insulate the private sector against changes in duties and taxes, by making the price of energy net of income tax.

(c) Repatriation of Profits and Debt Service

Foreign investors can convert revenues received in rupees to foreign exchange to service debt and repatriate profit through an arrangement with the State Bank of Pakistan. This will be extended to cover subprojects financed by the Fund.

(d) Price Reopeners

The GOP has decided that the price for the purchase of electricity from the PS will be fixed at the time of negotiations, with a mechanism based on indices to adjust for future change. However, the PS and GOP will be able to renegotiate a price as a result of changes beyond the control of the PS and Fund lenders. Such changes will include civil works, impact of environmental safeguards and unanticipated foreign exchange movements on project costs and financing costs.

ii. Eligibility Criteria

The institutional framework for review, approval and financing PS subprojects will involve two sequential processes: the review of PS proposals by GOP and the issuance of an LOI, and the appraisal of subproject loan applications by the Fund. Criteria to determine whether PS investments are eligible for consideration first by GOP then by the Fund will be included in the brochure to be issued by GOP. The Fund will also issue guidelines outlining the procedures for appraisal and supervision of PS subprojects.

(a) Eligibility Criteria for Consideration of PS Proposals by GOP

The eligibility criteria agreed on by the GOP and WB for consideration of PS proposals by GOP are (i) integrability; (ii) competitiveness; and (iii) viability.

(i) Integrability: Public and private sector investments should form an integral part of the national least cost development plans for the energy subsectors involved.

(ii) Competitiveness:*/ The PS can participate by either (a) responding to a general announcement which provides parameters to be adhered to in the preparation of proposals, or (b) submitting a proposal solicited through a bidding process, to implement projects at identified sites, for which feasibility and environmental impact studies have already been prepared by the Government. PS subprojects will emerge through a competitive process. Competitiveness will be ensured by considering proposals that offer prices of electricity that are less than the unit cost of generation that WAPDA would have incurred adjusted for financing forms available to PS.

(iii) Viability: The economic rate of return of PS proposals should exceed the financial rate of return, estimated between 15% and 20%, which is considered appropriate to attract foreign investors in the international market and correspond to the rates of return currently secured by the PS in Pakistan. Investors should be creditworthy. Equity contributions of at least 25% will be required to ensure a viable capital structure and an acceptable debt service coverage ratio.

(iv) Limited Recourse Financing: PS investors should not require direct sovereign guarantee for suppliers' credits and commercial loans. Institutions providing these funds should be prepared to assume project specific risks. In the event such risks occur, the recourse of the institutions providing suppliers' credits and commercial loans will be limited to the provisions of the SP.

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*/ The WB uses this term slightly differently than AID does, especially in contracting contexts. Competition between proposals, with the lowest price prevailing, is not envisaged here. A more apt term might be reasonableness of price. This is, after all, what AID ultimately seeks, with competition, at least in contracting, a means to that end. AID's ICI regulations do not require competition in the selection of borrowers, but rather reasonable price and good commercial practice (HB 1B Chapter 19).

(b) Criteria for Consideration of Subprojects by the Fund

Although GOP's review of PS proposals will generally establish the technical, economic and financial viability of subprojects, such a review will be undertaken without reference to firm financing terms and conditions. Therefore, GOP's approval of proposals, evidenced by issuance of LOIs, is a necessary but not sufficient condition for advancing loans from the Fund. The Fund will have its own guidelines for assessing the technical and financial viability of PS proposals. To be considered for loans from the Fund, subprojects should meet the following eligibility criteria:

(i) Corporate Structure: Subproject companies should be incorporated in Pakistan under the Companies Ordinance. In cases of joint ventures with public sector agencies, at least 51% of the equity of the subproject company should be held by the PS; and

(ii) Subproject Planning and Implementation: Subproject companies should appoint: (a) Engineering Consultants with international experience to prepare detailed design, bidding documents, etc., and supervise implementation; (b) Financial Advisors with international experience to prepare the financing package and negotiate agreements to mobilize limited recourse financing; and (c) Principal Contractors with adequate experience to take full responsibility for the implementation of subprojects. They should provide performance bonds, of at least 10% of the contract value and underscore their commitment to the subprojects by taking up to 5% of the equity.

(c) Agreements

All parties will enter into a set of agreements to define their mutual obligations and responsibilities during construction and operation of the subproject. These are:

(i) Letter of Intent (LOI): An LOI will be issued following acceptance by various government agencies of the major technical and financial parameters and economic viability of the proposed investment. The LOI will provide the sponsors the exclusive right to the project for a period to be stipulated and GOP's concurrence to initiate the feasibility studies, selection of contractors and sourcing of financing. The LOI will include an energy purchase price with provision for reopeners and outline the incentives and price adjustment mechanism.

(ii) Implementation Agreement (IA): An IA will supersede the LOI. It will be signed between the GOP and the PS, following acceptance of feasibility studies. The IA will define the obligations of the GOP and the companies during implementation and operation of the subprojects. The companies' responsibilities will include financing, design, construction, operation and maintenance of subprojects to mutually agreed standards and parameters. The IA will cover approvals to establish and operate the subproject, permission for foreign private investments and remittance of foreign exchange, underwriting of energy purchase obligations and risks borne by GOP, etc. It will also define the terms and conditions under which the subproject could be transferred to the Government;

(iii) Power Purchase Agreement: The PPA will be signed between the subproject companies and the power purchaser, i.e. WAPDA, and will be guaranteed by the GOP. It will define the electricity purchase price and the mechanism for annual adjustments based on indices to be agreed. It will also specify the quantity and quality of power to be purchased, performance linked rewards and penalties, and arrangements and frequency of payments. The arrangements for resolution of disputes regarding the purchase price and operation of the contract will also be defined.

(iv) Construction Agreement: The Construction Agreement will be signed between the subproject companies and principal contractor responsible for construction and commissioning of subproject. The Construction Agreement will define the scope, sources of supply, contract value, implementation schedule, construction standards, penalty and bonus provisions linked with performance. The arrangements for the resolution of disputes, price adjustments, if any, will also be defined in the agreement. The contractors will assign a performance guarantee to the lenders.

(v) Operation and Maintenance Agreement: If the subproject companies are not the subproject operators, they will be required to sign agreements with entities responsible for operation and maintenance (O&M) of the subproject according to performance standards outlined in the IA and PPA. The GOP will approve this agreement.

(vi) Fuel Supply Agreement: In the case of thermal power plants, the subproject companies and the fuel supplier will enter into a long-term agreement for supply of fuel. The agreement will stipulate the price, escalation possibilities, quality, quantity and frequency of fuel supply, and penalties for inadequate performance. The fuel may come from the same PS company that sponsors the power plant, from another PS company(s) or from public sector sources. The agreement will be guaranteed by the Government when the fuel supplier is public sector.

(vii) Other Agreements: The SP will also include Shareholders' Agreement, Loan Agreements, and Escrow Agreements as needed, depending on the size and type of the subprojects.

iii. Risk Minimization

(a) Implementation

The principal source of risk during implementation is delay in completion. Delays in subproject completion will involve risk to the lenders in that their debt would not be serviced, risk to the investors by foregoing the return and risk to the Government in that the supply of energy would not materialize. Delays in subproject implementation could take place because of:

(i) Force Majeure: In the case of delay in subproject completion or suspension of operation from causes beyond the control of the subproject company, the investors would only be protected to the extent of the insurance coverage obtained by the subproject companies. Although this would delay energy availability, the Government would not bear any financial risk and would have no recourse; however, it would provide financing through the Fund to complete the subprojects and cover debt servicing to the lenders.

(ii) Failure by the Principal Contractor: In the case of delay attributable to failure of the principal contractor or any of his subcontractors, the lenders would have recourse to the principal contractors' performance guarantee bond which will have been assigned to them at the start of subproject implementation. If this is not adequate to cover the debt service, lenders will reschedule the debt. In case of protracted delay in implementation, the lenders will have recourse to the project assets of the principal contractor and the Government will

have recourse to the assets created by the investors' equity. In addition, the Government will be compensated for the loss of energy by exercising their right to encash the performance guarantee given by the subproject companies.

(b) Operations

Once the subprojects are completed, the principal source of risk involves the loss of revenue on account of the following two reasons:

(i) Performance Shortfall: Shortfall in performance could be either on account of less than guaranteed offtake by the purchasers, or failure by the O&M contractor to perform. In the first case, there would be no shortfall in revenue as the subproject would be fully compensated under the take-or-pay arrangements in the PPA. Other possibilities are discussed in the WB Staff Appraisal Report. The performance guarantees of the operating companies will be assigned to the lenders. However, in case of shortfall on account of failure in performance of the O&M contractor, there would be inadequate revenue to meet the debt service and, thereafter, other obligations. Any shortfall in revenue would be offset against the investors return.

(ii) Default by the Power Purchaser: All PS companies financed under the proposed Project will sell power to entities which are partly or wholly owned by the Government. Consequently, the Government would be the guarantor of the power purchasing agreements.

Details on additional provisions to cover cost overruns and to establish a debt service reserve escrow account are in the WB Staff Appraisal Report.

iv. The Role of the Donors

The involvement of the major energy donors will provide comfort to the PS in considering limited recourse financing and participation in the project. The provision of world class technical assistance by USAID will assure the PS that proposals will be thoroughly and fairly appraised both for receiving an LOI from the GOP and for receiving a loan from the Fund. The role of the World Bank will be critical in this regard, too, since the Bank will take the lead in formulating the institutional framework for the operation of the Fund and the appraisal of projects. The Bank will also review all loan applications and the quarterly progress reports submitted by the PEP.

3. Component 3: Project Support Activities

Three activities are envisioned for this component.

a. Policy Analyses and Special Studies

Up to $4.5 million has been set aside to finance special studies relevant to PS involvement in the energy sector. Funding is available for approximately 200 person-months of short-term expatriate technical assistance in financial, engineering, environmental, policy analyses, and other areas. The following topics are illustrative:

- Standard contracts for small subproject sponsors on an "avoided cost" or other appropriate basis to simplify and reduce the cost of the proposal submission/approval process.

- Feasibility studies for independent rural utilities (generation plus distribution)

- Specific pre-feasibility analyses of potential subprojects to develop data for the preparation of opportunity notices for private power procedures.

- Feasibility studies for generation and distribution of power in industrial estates.

- Analyses of environmental effects of possible power facilities in certain regions (e.g., in support of specific program opportunity notices being developed by the GOP).

- Private contract operation of selected WAPDA generation facilities or distribution feeders/substations.

- Analyses of alternative purchase pricing options such as the avoided cost concept, bid established prices and cost-based pricing.

- Options of increasing private sector debt financing by floating public bonds and other financial mechanisms.

It is anticipated that five to ten such special studies will be undertaken during the first five years of the project. USAID and the GOP will approve each request for special studies. The GOP has expressed preference for host country contracting for these studies; this is fully acceptable to AID.

b. Support for Proposals from US and Pakistani Firms

Up to $10 million will be used to reduce the development risk to U.S. and Pakistani firms with equity positions in subproject proposals by providing partial support for prefeasibility and feasibility studies. This activity was recommended in the ANPAC cable (see Annex A)

and is designed to ensure that U.S. and Pakistani firms are encouraged to participate actively as sponsors and equity providers in private power subprojects.

U.S. firms estimate proposal development costs to range from $100,000 to $5 million, so that AID's $10 million could partially cover costs of at least 10 subproject proposals. On receipt of an LOI, U.S. and Pakistani firms with an equity position in a subproject may request loan financing for up to 50 percent of U.S. and Pakistani source and origin development costs of their proposals, up to $1 million. These loans would be administered separately by NDFC with terms to be agreed on with A.I.D., but probably involving payback over five to eight years. The following activities would be eligible for loan financing: site analysis, design and engineering, management and operations plans, fuel supply analysis, legal analysis, project component cost estimating, financial plans and financial analysis, environmental assessments and analysis of mitigation measures, environmental monitoring, assessment of innovative technologies, management and operations plans, preparation of applications and data for required permits and authorizations and preparation of legally binding commitments (e.g., LOIs, PPAs, Implementation Agreements, Fuel Supply Agreements, Security Agreements, etc.).

Firms that receive such loans and are later successful in obtaining a PPA from the GOP will be required to repay all funds received within six months of signature of the PPA. All payments will be made in rupees to the Fund's account in the State Bank.

c. Mission Management Support

To help manage the project, USAID intends to hire (i) a USPSC project coordinator who will be an investment professional with experience in management of banking, financial sector, power sector and/or large construction projects, (ii) an FSN project manager and (iii) an FSN secretary. These people will help USAID coordinate, oversee, implement and evaluate the project. More details of the planned project management are given in Section IV. in the Administration and Monitoring Arrangements, the Evaluation Plan and the Monitoring Plan. Some $1.773 million has been set aside to cover the cost of these individuals, as well as all project evaluations and audits.

IV. Implementation Plan

A. Implementation Schedule

The Project will be implemented over ten years, beginning with the Project Agreement signing, estimated to be in September, 1988, and ending on the PACD in September 1998. Annex K presents the tabular implementation schedule.

1. Component 1: Institutional Building

The long-term Resident Advisory Team of five individuals (six if the WAPDA PPC is later judged by the GOP and the Project Officer to need an Advisor) and short-term expatriate assistance will be procured by USAID under one umbrella contract, in accordance with FAR and AIDAR. Initially most of the new Pakistani long-term professional and support staff to be financed by AID will be hired under this same umbrella contract. After the first two years, the GOP will take over the financing of these positions, most likely as individual contracts until permanent GOP positions are created. AID is prepared to finance the professional and support staff needed for the PPC. The NDFC will finance the staff for the PED; WAPDA and the Energy Wing will similarly finance their own positions needed to implement the project. The staffing of these offices is a precondition for the World Bank contribution to the Energy Fund.

Outlines for scopes of work for the long-term resident advisors are shown in Annex O. It is expected to take approximately nine months to award the contract and for the Resident Advisory Team to arrive in-country. In the interim, short-term technical assistance may be contracted using IQCs to undertake preliminary studies and other initial activities.

The long and short term technical assistance proposed for this project is budgeted to be adequate to cover not only the USAID $125 million portion of the Fund, but also the contributions of other donors. This was discussed with and agreed to by the World Bank because USAID funds for TA are grant. Compared to an estimated total contribution from all donors of approximately $550 million, the TA budget provided in this project for institutional development and appraisal of proposals seems reasonable. No technical assistance would be brought to Pakistan without the concurrence of the GOP. This is standard operating procedure for USAID. In the event less than the full amount budgeted for TA is required, the excess may be reallocated to the Fund for lending to subprojects. Providing for a larger budget at this stage provides a good measure of flexibility to all parties to respond as needs arise, without committing the GOP to technical assistance that may not be needed.

Training needs will be assessed by the Resident Advisory Team in conjunction with the heads of the offices once the institutions are staffed. The Contractor will identify, place and coordinate the training of individuals in U.S. institutions and industries directly or through AID training facilities.

The required commodities shown in Section IV.C.2. have standardized specifications and will be procured by USAID. Up to 12 months will be required for these commodities to arrive in-country.

2. Component 2: The Energy Development Fund

After signature of the Project Agreement, a Project

Implementation Letter (PIL) will be prepared transmitting the terms and conditions for use of AID grant funds in this Project. The Ministry of Finance will negotiate an agreement with the NDFC/PED for operation of the Fund. AID grant funds will be dispursed through letters of commitment issued for each subproject.

It is impossible to predict the number of subprojects to be approved. A likely scenario for approval and financing of subprojects might be: one subproject approved in Year 1, two subprojects approved in Year 2, four subprojects approved in Year 3, and up to 15 during Years 4 and 5.

3. Component 3: Project Support

a. Policy Analyses and Special Studies

Ideas for policy analyses and other special studies may originate with the PS, the GOP, the Advisory Team and other project implementors. The criteria for funding include relevance to the development of private sector power in Pakistan. Most studies will be undertaken by the MWP under AID host country contracting procedures; if the GOP wishes, studies could also be done through A.I.D. direct contracting using AID/W or Mission indefinite quantity contracts.

b. Support to U.S. and Pakistani Subproject Sponsorship

As described in III.C.3 above, feasibility studies and other project preparation costs of U.S. and Pakistani firms which receive LOIs will be eligible for loan financing. The following sequence of events is probable: (1) firms receive LOIs; (2) firms request loan financing for eligible costs incurred to obtain the LOI and submit to NDFC/PED their plans to carry out feasibility studies; (3) after review and approval of reimbursement claims and plans, fifty percent of eligible costs are reimbursed by NDFC on a loan basis from funds made available under this component, up to $1 million for each proposal. If the venture involving a U.S. or Pakistani firm successfully concludes a PPA, the amount of loan disoursed would have to be reimbursed to the Fund by the proposer within six months of signature of the PPA.

c. Mission Management Support

The Mission intends to engage a Project Coordinator (PC) under a Personal Services Contract who will arrive within the first six months of project implementation. The PC will be an experienced investment professional. A brief outline of workscope is at Annex O. Support staff members will be hired by the PC within the second six months. Four external Project evaluations are scheduled to occur in 1991, 1993, 1995 and 1997. Project audits will be conducted in 1992, 1994 and 1996 and will include a review of the Fund's audits of subprojects.

B. Administrative and Monitoring Arrangements

1. USAID Responsibilities

The USAID/Pakistan Office of Energy and Environment (E&E) will have overall responsibility in USAID for managing the Project. E&E is authorized five U.S. Direct Hire (USDH), two U.S. Personal Service Contract, and 40 (including 15 professional) Foreign Service National (FSN) positions. The E&E Office is organized into four divisions. Day to day responsibility for implementing the project will be assigned to the Private Sector Power Section of E&E's Power Division. The USDH Chief of the Power Division has U.S. electric utility experience. Management of the project will require adding one U.S. Personal Services Contractor and two (one professional) FSN employees to the staff of the Power Division for the first five years when the level of technical assistance is at its highest.

E&E will continue to be assisted in all legal, contracting and procurement actions by USAID staff offices with expertise in these areas. The Office of Project Development and Monitoring will provide general support and advice and will monitor the implementation of the Project. These staff resources, together with complementary support of AID/Washington backstopping staff, are considered adequate to handle USAID's implementation responsibilities under the Project.

2. Government of Pakistan Responsibilities

a. Project Implementation

i. Economic Affairs Division

The Economic Affairs Division (EAD) of the Ministry of Finance is the official GOP counterpart institution for this project and will sign the Project Agreement, Project Amendments, request the first implementation letter and approve all subsequent implementation activities which modify or refine the project concept as specified in the project agreement. In addition to EAD's representative, the GOP shall designate a Senior GOP Project Coordinator to assure proper coordination of implementation among all GOP and other agencies.

ii. Private Power Cell (PPC)

The PPC will be the main implementing agency for GOP technical review and approval of subprojects. The Director General, PPC, under the policy guidance of the Additional Secretary (Power) of the MWP, will have overall responsibility for project activities in the MWP and be the principal technical counterpart to the USAID Project Officer. The Secretary of Water and Power or his designee will coordinate project decisions with other participating GOP entities.

iii. WAPDA Private Power Cell (WPPC)

The Director General, WPPC, will be responsible for implementation activities in WAPDA. Working under the policy guidance of Member (Power), the Director General will have overall responsibility for project implementation activities in the WPPC and will be available as required for consultations with USAID staff.

iv. Private Energy Division (PED)

The PED will be established as a new Division of NDFC. A Senior Executive Vice President will manage the PED and report directly to the Chairman of NDFC. The Senior Executive Vice President will be the GOP's authorized representative for the PED, and the Fund counterpart for the USAID Project Officer. NDFC and the WB have agreed that a study will be carried out during the first year of the project to assess the merits of establishing the Fund as an autonomous financial institution.

v. Energy Wing

The Energy Wing within the Planning Commission will be responsible for planning and policy reviews of subprojects for the GOP. The Senior Chief, Energy Wing, will be the GOP's representative for planning and policy matters related to the project. He will be the planning and policy counterpart for the USAID Project Officer.

b. Disbursements from the Fund

Disbursements from the Fund will be approved by the Senior Executive Vice President of the PED on the recommendation of his staff and consultants and after review by the World Bank. A 30-day objection period for USAID and other donors will also be allowed. The PED will be responsible for providing the donors with quarterly reports and annual audits of the Fund as a whole and the individual subprojects.

c. GOP Monitoring

Acting on behalf of the Secretary of the MWP, the Private Power Cell will monitor and report on the implementation of this project for all activities carried out in the MWP, MPNR, WAPDA and EW. Each concerned GOP entity will prepare regular reports on their respective activities and share these with all others. The PPC, PED, WPPC, and EW will participate together in key project review meetings. Shared documents will include implementation plans, work plans, tender documents, contracts, studies, reports and key correspondence between the GOP, WAPDA, USAID, the WB, the ADB, other donors and contractors.

C. PROCUREMENT PLAN

1. Contract Procurement

a. Resident Advisory Team Contract

A single AID direct contract will procure services of the long-term expatriate Resident Advisory Team to support the Project. This contract will also cover short-term expatriate technical assistance for institution building activities, implementing the training plan (discussed in Section IV.D., Training Plan), long term Pakistani contract personnel and subproject appraisals. Indefinite quantity contracts (IQCs) may be used for assistance required before the Resident Advisory Team is in place. Table IV-1 presents illustrative technical assistance requirements. Table IV-2 shows the USAID funded Pakistani professional and support staff requirements.

Although technical assistance is a major component of the AID project, its total cost, some $14 million, represents a very small percentage of the total anticipated donor inputs to the wider project estimated to reach about $550 million. The technical assistance budget represents an upper limit; depending on need a little, some or all of the T.A. provisions may be used in implementing the project. No technical assistance will be employed without the specific concurrence of the GOP.

The technical assistance contract will be a competitively awarded contract. It will be incrementally funded during the life of the project. No waivers are anticipated to be required for this procurement.

The schedule for this procurement is as follows:

Action	Action occurs on:	No. of Days between each action
PIO/T fully - executed and submitted to Office of Commodities & Contracts (O/CC)*	Day 1	
CBD synopsis published	Day 15	(15 Days)
Solicitation Document issued	Day 60	(45 Days)
Solicitation Closing Date (proposals received)	Day 105	(45 Days)
Technical evaluation results submitted to O/CC	Day 135	(30 Days)

Action	Action occurs on:	No. of Days between each action
Request for Best and Final Offers (BFO), if necessary	Day 150	(15 Days)
BFO Closing Date	Day 180	(30 Days)
Technical evaluation results of BFO's submitted to O/CC	Day 195	(15 Days)
Award Contract **	Day 215	(20 Days)
Contractor mobilized	Day 275	(60 Days)

* The fully-executed PIO/T will have a contractable statement of work (SOW) and well-reasoned evaluation criteria. Drafts of the SOW and evaluation criteria will be submitted to O/CC for review prior to inclusion in the final PIO/T.

** Prior to the award of the contract a preaward audit may be required. In this instance, it may be necessary to add 30 days to the procurement schedule.

Publication in the Commerce Business Daily, and the Request for Proposals will contain the following language prescribed by CIB 85-21 regarding the use of Gray Amendment entities:

> "AID encourages the participation to the maximum extent possible of small business concerns, small disadvantaged business concerns, and women-owned small business concerns in this activity as prime contractors or subcontractors in accordance with Part 19 of the Federal Acquisition Regulations. In this respect, it is anticipated that the Prime Contractor will make every reasonable effort to identify and make maximum practicable use of such concerns. All selection evaluation criteria being found equal, the participation of such concerns may become a determining factor for selection."

Effective management of this project requires that all activities be under the control of a single prime contractor. While this effort is not considered appropriate for 8(a) sole sourcing or using set-asides in the selection of a prime contractor, the RFP will require that the prime contractor submit a "small business and small disadvantaged business subcontracting plan" to satisfy the requirements of Public Law 95-507. Such plan should indicate the percentage goals of the contract to be awarded small and disadvantaged business concerns.

b. Policy Analysis and Special Study Contracting

Policy analysis and special studies under Component 3 will be conducted under host country contracting procedures or through AID contracting instructions.

Expatriate expertise, if required, could be procured using the Resident Advisory Team contract and AID/W IQCs, when local expertise is available it may be obtained through the Mission's IQCs.

c. Contracting for U.S. Subproject Sponsorship

At least ten concessional loan agreements will be signed between NDFC/PED and US and/or Pakistani sponsors of private power subprojects. These agreements will cover a portion of the development costs associated with feasibility and subproject proposal preparation. Only U.S. and Pakistani firms with a subproject equity participation and possessing an LOI would be eligible to enter into these agreements.

d. Mission Project Coordinator (USPSC)

The Mission Project Coordinator will be a Personal Services Contract (PSC) position and will be assigned in the Office of Energy and Environment. This position will have a duration of 69 months and will be filled through normal AID competitive procurement procedures for PSC contracts. Since the incumbent will be hired through competition, no waivers are expected to be sought. The schedule for the acquisition of Project Coordinator's services is as follows:

Action	Action occurs on:	No. of Days between each action
PIO/T fully - executed and submitted to Office of Commodities & Contracts (O/CC)*	Day 1	
CBD synopsis published	Day 15	(15 Days)
Announcement Closing Date (applications received)	Day 60	(45 Days)
Evaluation results submitted to O/CC	Day 90	(30 Days)
Award Contract	Day 120	(30 Days)
PSC on board	Day 150	(30 Days)

* The fully-executed PIO/T will have a contractable statement of work (SOW) and well-reasoned evaluation criteria. Drafts of the SOW and evaluation criteria will be submitted to O/CC for review prior to inclusion in the final PIO/T.

TABLE IV-1

ILLUSTRATIVE TECHNICAL ASSISTANCE PLAN

Agency	Advisor/Consultant	Person Months
A. Long-term Expatriate Technical Assistance - Institution Building		
USAID	Resident Advisor (Chief of Party)	48
PED	Resident Advisor (banking)	24
	Resident Advisor (technical)	48
PPC	Resident Advisor	48
	Resident Advisor (Environmentalist)*	48
WPPC**	Resident Advisor	48
	Long-term TA Total	264
B. Short-term Expatriate Technical Assistance - Institution Building		
PED	Financial Analyst	4
	Contract Advisor	10
	Computer System Advisor	12
PPC	Policy Planning Consultant	12
	Power System Economist	6
	Power Systems Engineer	10
WPPC	PPA Consultant	9
	Power System Planner	20
	Utility Finance Specialist	14
	Power Systems Engineer	10
	Contracts Mgt Consultant	6
EW	Power Systems Consultant	12
	Financial Consultants	6
	Short-term Total	131
C. Short-term Expatriate Technical Services - Subproject Appraisal		
PPC/WPPC	System Planning Engr	20
	Power Generation Engr	28
	Power System Financial Analyst	28
PED	Financial Specialist	12
	Proj Appraisal Specialist (Gen)	12
	Proj Appraisal Specialist (Tech)	12
CMC/EW/WPPC	Mining Specialists	60
	Appraisal Total	162

* Initially the environmental expert will come as a short term advisor. The budget allows for conversion to a full time position, if the need is found to exist.

** The WPPC resident advisor position has been budgeted for and will be contracted if GOP so requests. A resident advisor will likely not be provided for WPPC as part of the initial technical assistance team, but may be included in the TA effort at a later date.

TABLE IV-2

USAID-FUNDED PAKISTANI PROFESSIONAL & SUPPORT STAFF

Agency	Position	Person Months
Private Power Cell (PPC)	Director General	33
	Utility Operation & Plann. Specialist	21
	Financial Specialist	21
	Economic Analyst	21
	Procurement Specialist	21
	Legal Specialist (Part-time)	30
	Financial Analyst	45
	Jr. Power Engineer	33
	Support Staff (5 persons)	180
	TOTAL:	405

2. Commodities

The commodities required for the project are shown below. Host country procurement will be maximized for equipment to be used by GOP agencies. The Resident Advisory Team will subcontract with suppliers and vendors for commodities required under the umbrella TA contract. Direct USAID contracts in accordance with Federal Acquisition Regulations (FAR) and AIDAR will be used for commodities required by personal services contractors for project support. All procurement by subborrowers will be in accordance with good commercial practice, as per Handbook 1.B. Chapter 19.

Table IV.3: Illustrative Commodity List

ITEM	ESTIMATED QUANTITY	TOTAL COST	SOURCE
Micro-computer system, with CPT, hard disk, plotter, and printers.	25	$228,000	U.S.
Mini Computer	1	$300,000	U.S.
Software packages (Financial/ Energy Analysis/WP/Utility)	125	123,000	U.S.
Typewriters	22	22,000	U.S.
Office Furniture and Equipment sets	65	325,000	Pakistan
Photocopiers	25	110,000	Japan
Vehicles, right hand drive	10	117,000	Japan
		$1,225,000	
Office rental, utilities and Maintenance Equipment	-	892,000	
		$2,117,000	

The project will also finance office rental and basic office supplies.

3. Procurement Under Subprojects

a. Subproject Sponsor Selection

Subproject sponsors are the "sub-borrowers" as defined in AID's ICI procedures. The Fund will screen subprojects according to criteria given in III.C.2. As is traditional with ICI projects, loan requests will be individually examined and approved or rejected on a first come, first served basis. This approach is being used today by the GOP to evaluate and select PS proposals.

The Fund may periodically publish Program Opportunity Notices (PONs) in appropriate international and domestic journals to encourage widespread participation. When such data are available for specific opportunities, the PONs will include location, size, fuel, and other requirements, the total MWs to be produced, the length of the project, and the selection criteria AID may have parallel notices specifying pertinent AID regulations published in U.S. journals to maximize awareness of the program among prospective U.S. investors.

b. Subproject Procurements

To encourage the submission of proposals and foster the most innovative and appropriate investment proposals, the Project will impose no restrictions on proposers other than requiring conformity to AID source/origin/nationality rules. These rules would be applied only to those subprojects which are financed from AID funds. To assure that all potential proposers are aware of applicable AID rules, the AID published Program Opportunity Notices (PONs) will contain all of the requirements which must be observed by proposers.

Because the Project involves the creation and institutionalization of an intermediate credit institution (ICI) and the financing of activities from funds made available by AID to that institution, the requirements made applicable to proposers would be those established in AID HB 1B, Chapter 19, "Intermediate Credit Institutions". The PON will be the vehicle by which AID assures that the "good commercial practice" and "most advantageous competitive offer" standards of Chapter 19 are observed.

c. Professional Technical Analysis

The AID-financed technical services contractor responsible for expert professional advice to the Fund will include among its responsibilities the requirement to advise the Fund on all aspects of each proposed investment, including price reasonableness. This function will be an added safeguard, prior to final approval of a proposal and the execution of a loan agreement, that price reasonableness has been achieved.

D. Training Plan

Training is a vital part of the project. The project will fund overseas training for 50 persons during the ten year LOP. In the first 12-18 months, approximately 14 persons will be trained to form the nucleus of the project's implementation staff. Depending on implementation progress, the training requirements of the project will have to be reassessed and further short-term training may be required in similar fields. In later years an additional 11 professional staff members may have to be recruited and subsequently trained. The total number of people to be trained in the first five years is therefore about 25. Normal staff turnover and advancement of personnel will require at least an equal amount of training during the last five years. An illustrative Training Plan is presented in Table IV-4. This will be refined as experience is gained and initial training is evaluated during the 1991 evaluation. The preparation of a detailed Training Plan will be the responsibility of the Resident Advisory Team.

No long-term academic training is anticipated. All training requirements will be met by short-term (2-6 month) courses for senior and middle level managers.

TABLE IV-4

ILLUSTRATIVE TRAINING PLAN FOR YEARS 1 & 2

Project Institution/ Type of Training	Length of Training (months)	Place of Training	No. of Parti-cipants	Proposed Schedule
I. Out-of-Country				
A. Private Power Cell				
1. Power Generation Appraisal, Utility Financing, etc.	2-6	U.S. Utilities/ University	3	1990-91
2. Public Utility Commission Operations	2-3	U.S. Utilities/ University	2	1990-91
3. Utility Procurement, Contracting and Data Management Systems.	2-3	U.S. Utilities/ University	1	1990-91
4. Utility Economics, Planning, Engineering Management, etc.	2-3	U.S. Utilities/ University	2	1990-91
B. WAPDA Private Sector Cell				
1. Power Generation Technology, Utility Financing, etc.	2-4	U.S. Utilities/ University	2	1990-91
2. Administration and Management of Private Power Contracts.	2-4	U.S. Utilities/ University	1	1990-91
3. Utility Planning and Economics	2-4	U.S. Utilities/ University	1	1990-91
4. Utility Contracting/PPA Prep., Public Utility Commission Operations, etc.	2-4	U.S. Utilities/ University	1	1990-91
C. Energy Wing				
1. Financial Analysis & Project Costing, etc.	2-4	U.S. Utilities/ University	2	1990-91

Project Institution/ Type of Training	Length of Training (months)	Place of Training	No. of Parti-cipants	Proposed Schedule
2. Utility Economics, Planning and Energy Management, etc.	2-4	U.S. Utilities/ University	1	1990-91
D. N.D.F.C./PED				
1. Institutional Finance Services, Development Banking, Loan Syndication, etc.	2-4	U.S. Financial Institution and Merchant Bank	3	1990-91
2. Power Project Appraisal, Evaluation, and Costing, etc.	2-4	U.S. Financial Institution and Merchant Bank	2	1990-91
3. Credit Risk Analysis.	2-4	U.S. Financial Institution and Merchant Bank	2	1990-91
4. Equity finance, Bond Issuance, Capital Market Development, etc.	2-4	U.S. Financial Institution and Merchant Bank	2	1990-91
E. Coal Mining Cell				
1. Technical, Financial & Economic Appraisal of Coal Mining Projects	2-4	U.S. Coal Mines & and Mining Universities	2	1990-91
2. Coal Reserve Assessment & Estimation	2-4	U.S. Coal Mines and Mining Universities	2	1990-91
3. Study Tours for Mine Owners	2-4	U.S. Coal Mines and Mining Universities	2	1990-91

Project Institution/ Type of Training	Length of Training (months)	Place of Training	No. of Parti- cipants	Proposed Schedule
II. <u>In-Country - Years 1-5</u> <u>ICIs, Private Sector Sub-Project Sponsors, GOP & Other Private Sector Energy Organizations</u>				
Seminars, Workshops & Training Programs on Evaluation of Power Generation Projects and other important Institutional, Technical, Financial, Legal or Contracting issues/topics.	1-2 each Week	Karachi/Lahore/ Islamabad	400	1990-91

Four categories of training in the U.S. and in-country will be provided, as described below:

1. U.S. University Academic Courses

Topics will include specific utility planning, finance, and regulation issues. Trainees will be prepared for policy development and planning and to perform technical and financial evaluations of private sector subprojects. A number of U.S. universities, such as Harvard, the University of Florida, Michigan State, Ohio State and the University of Wisconsin, now offer specialized courses in regulating and deregulating utilities, introducing independently owned power stations, utility accounting, utility economics and financial engineering issues.

2. Internships with U.S. Industries and Utilities

Individuals will be provided on-the-job training (OJT) in U.S. private and public sector industries and utilities having extensive experience with independent power generation in the U.S. Examples include Central Maine Power Company, Boston Edison, Southern California Edison Company, Pacific Gas and Electric Company and Houston Power and Light. Major independent developers include Bechtel, Tellus, Oxbow and Associated Energy Services.

Individuals will also be placed with U.S. public entities involved in Public Utility Regulatory Policy Act (PURPA) and independent power production implementation such as state Public Utility Commissions (PUC's) and the Federal Energy Regulatory Commission (FERC). Since regulatory institutions are not normally training organizations, special arrangements will have to be made on a case-by-case basis. Such arrangements are possible; the Energy and Environmental Policy Center at Harvard University places about 40 students a year in various public agencies and private corporations including PUC's and FERC.

The program will provide hands-on, practical experience with new power technologies and the complex financial, economic and regulatory issues associated with independent power producers.

3. Internships with U.S. Merchant Banks and Financial Institutions

This program will focus on practical, hands-on training of individuals from the PED in topics such as modern techniques of raising capital through bond or stock offerings, subproject appraisals and evaluations, asset based financing, loan syndication and credit risk analysis. Special arrangements will be made with U.S. financial institutions and merchant banks like Lehman Brothers, Bankers Trust, Citibank, Bank of America, Paine Webber and Merrill Lynch who have demonstrated the capability of training their own staff in these functions.

4. In-Country Seminars, Workshops and Training Programs

USAID will finance a number of short-term consultants early in

the project to develop seminars, workshops and training programs focusing on the complexities of power generation subprojects. These training programs will address subprojects from institutional, technical, project packaging, legal and contracting perspectives. Participants in these training opportunities will be personnel involved with private sector joint ventures, employees of GOP counterpart institutions working with private power and interested representatives of private sector organizations.

E. Financial Plan

1. Budget Analysis and Expenditure Schedule

The total estimated cost of the Project over the ten year life is $1.918 billion. The AID contribution will be $170 million in ESF grant funds. The local currency counterpart contribution is approximately $400 million which includes equity participation, loans by Public Sector DFIs and operational expenditures. Other donors may contribute up to $430 million. Finally, under the terms of the Fund, the private sector will contribute up to about $1.3 billion.

On the following pages, Table IV-3 presents the summary of the total project cost by component, Table IV-4 presents the summary of total project cost by expense category, and Table IV-5 presents a projection of expenditures by fiscal year.

2. Cost Estimates

a. Technical Assistance

The levels of technical assistance have been estimated by key personnel within the counterpart agencies and the project design team. Costs for expatriate consultants (short and long-term) are based on recent Mission experience.

b. Commodities

Table IV-3 shows the breakdown of commodity costs, totaling $1.1 million. The costs of computer equipment are based on recent Mission experience with similar equipment under host country contracts by WAPDA for the Rural Electrification Project (391-0473). SER/COM/IRM review of the computer requirements will be requested before initiating procurement actions for procurements over $100,000.

Table IV - 5

SUMMARY OF TOTAL PROJECT COSTS BY COMPONENT a/
($ 000)

COMPONENT	SOURCE OF FUNDING						
	USAID			Counterpart Local Currency	OTHER DONORS	PRIVATE SECTOR	GRAND TOTAL
	FX	LOCAL	TOTAL				
1. INSTITUTION BUILDING (Subtotal)	13013	7,549	20,562	13,571	5,000	0	39,133
a. Technical Assistance	9,694	4,416	14,110	0	5,000	0	19,110
b. Training	455	430	885	0	0	0	885
c. Commodities	900	1,217	2,117	1,336	0	0	3,454
d. Project Appraisals and BDP Operational support	1,984	1,486	3,450	12,235			15,684
2. CAPITALIZATION FUNDS (Subtotal)	87,500	37,500	125,000	0	430,000	1,295,000	1,850,000
3. PROJECT SUPPORT (Subtotal)	14,795	2,162	16,957	0		10,000	26,957
a. Policy Analysis and Special Studies	3,196	1,316	4,512	0	0	0	4,512
b. Sub-Project Sponsorship	10,000	0	10,000	0	0	10,000	20,000
c. Mission Management Support	1,123	650	1,773	0	0	0	1,773
d. Evaluation & Audits	476	196	672	0	0	0	672
TOTAL	115,308	47,211	162,519	13,571	435,000	1,305,000	1,916,090
Inflation	1,659	2,012	3,678				3,678
Contingency	1,947	1,856	3,803				3,803
GRAND TOTAL	118,914	51,085	170,000	13,571	435,000	1,305,000	1,923,570

Notes:

a/ Exchange rate U.S. $ 1.00 = PRs 17.50

b/ Inflation is calculated at 5-percent for Foreign Costs and 10-percent for Local Costs.

c/ Inflation and contingency (10-percent) are applied to Technical Assistance, Training and Commodity line items only.

Table IV - 8

SUMMARY OF TOTAL PROJECT COSTS BY EXPENSE CATEGORY a/

EXPENSE CATEGORY	LIFE OF PROJECT FUNDING ($ 000)						
	A.I.D Dollar Grant			Counterpart Local Currency	OTHER DONORS	PRIVATE SECTOR	GRAND TOTAL
	FX	Local	Total				
IA. TECHNICAL ASSISTANCE (Subtotal)	9,694	4,416	14,110	0	5,000	0	19,110
IB. TRAINING (Subtotal)	45[illegible]	430	835	0	0	0	835
IC. COMMODITIES (Subtotal)	9[illegible]0	1,217	2,117	1,336	0	0	3,454
ID. CAPITALIZATION FUND (Subtotal)	87,500	37,500	125,000	0	430,000	1,295,000	1,850,000
IE. OTHER COSTS (Subtotal)	16,759	3,648	20,407	12,235	0	10,000	42,641
1. Project Appraisals and GCP Operational Support	1,964	1,486	3,450	12,235	0	0	15,684
2. Support for sub-project sponsors	10,000	0	10,000	0	0	10,000	20,000
3. Policy Analysis and Special Studies	3,196	1,316	4,512	0	0	0	4,512
4. Mission Management Support	1,123	650	1,773	0	0	0	1,773
5. Evaluation & Audits	476	196	672				672
TOTAL	115,308	47,211	162,519	13,571	435,000	1,305,000	1,916,090
Inflation b/	1,659	2,018	3,678				3,678
Contingency c/	1,947	1,856	3,803				3,803
GRAND TOTAL	118,914	51,085	170,000	13,571	435,000	1,305,000	1,923,570

Notes:

a/ Exchange rate U.S. $ 1.00 = PRs 17.50

b/ Inflation is calculated at 5-percent for Foreign Costs and 10-percent for Local Costs.

c/ Inflation and contingency (10-percent) are applied to Technical Assistance, Training and Commodity line items only.

c. Training

U.S. training costs are based on Mission experience with the Rural Electrification Project and the Development Support Training Program involving similar short-term training. In-country seminar costs are based on recent conferences sponsored by USAID.

d. Other Costs

Other costs include project management support to the Mission, subproject appraisal costs, etc. The host country cost estimates include salaries and salary related costs such as overheads, fringe benefits, and fees. A salary level has been included to cover the cost of hiring specialized, international-caliber Pakistani staff for critical positions.

e. Inflation

Inflation is included in the estimates for all AID funded project elements except the AID contribution to the Fund and support for U.S. subproject sponsors. Inflation is assumed to be 10 percent per annum for local costs and 5 percent for foreign costs.

f. Contingency

A contingency of approximately 10 percent is included on all AID project elements, except the AID contribution to the Fund and support for U.S. subproject sponsors.

3. Disbursement Mechanisms

a. Modes of Financing and Payment Verification

Table IV-7 presents the method of implementation and financing for each project element. In accordance with AID's Project Verification Policy Implementation Guidance, no departure from the three preferred modes of payment is anticipated. Details of the options available for disbursement to the ICI are described below.

b. Disbursement to the ICI

AID's contribution to the Energy Development Fund will be $125 million. Upon execution of the project agreement and satisfaction of conditions precedent, the first tranche of AID funds will be available for use by the Fund. On approval by the Fund of a proposal, the World Bank will allocate credit requirements among donors according to eligibility of suppliers. USAID will issue letters of commitment for eligible suppliers.

The PED will recommend the use of loan funds for subproject activities, based on NDFC's current procedures. As lead donor, the WB will approve use of the Fund's resources, notify affected donors, and allow 30 days for donor disapproval of a subproject loan. The PED will request replenishment of USAID funds as successive tranches are drawn down. USAID financial control will be maintained both when disbursing the tranches and at the annual PED audits.

TABLE IV-7
MODES OF IMPLEMENTATION AND FINANCING

PROJECT COMPONENTS AND METHOD OF IMPLEMENTATION	METHOD OF FINANCING	AMOUNT ($Million)
Component 1:		
Technical Assistance	AID Direct Payment	14.1
Training	AID Direct Payment	.9
Commodities	AID Direct Payment	2.1
HC Reimbursement	PIL and LCF Reimb.	1.4
Other Costs	AID Direct Payment	2.1
Component 2:		
Funding for the Intermediate Credit Institution	AID Direct Payment (L/Coms)	125.0
Component 3:		
Other Costs:		
Policy and Special Studies	PIL and Reimb.	4.5
Subproject Sponsorship	AID L/Coms	10.0
Mission Management Support	AID Direct Payment	1.8
Evaluation and Audits	AID Direct Payment	0.6
Contingency/Inflation	AID Direct Payment	7.5
Grand Total:		170.0

4. AID Contribution

The AID contribution of $170 million will be provided from ESF grant funds, which will finance both foreign exchange (about $120 million) and local currency costs (about $50 million) under the project. The following analyses reflect the AID contributions (including inflation and contingency) by component:

		Source:ESF Grant (000 $)			
	COMPONENT	Foreign Exchange $	Local Currency Equiv. $	Total $	Percentage
1.	Institutional Building	13,013	7,549	20,562	12.10
2.	Fund	87,500	37,500	125,000	73.53
3.	Project Support	14,795	2,162	16,957	9.97
4.	Contingency & Inflation	3,606	3,875	7,481	4.40
	Total:	118,914	51,086	170,000	100.00

AID will provide up to $14.110 million to finance expatriate technical assistance required by the PPC, WPPC, PED, and EW for the first six years of the Project. This AID project will also finance training totaling $0.885 million. A participant training travel waiver which exempts the GOP from covering these costs, has been signed by the USAID/Pakistan Mission Director and is included as Annex F. Commodities (such as office equipment, computers and vehicles) in the amount of $2.117 million will be financed. Up to $4.512 million have been earmarked for Special Studies. Up to $10 million have been provided to help reduce project development risks to U.S./Pakistani firms by providing partial loan support for the prefeasibility and feasibility studies needed to support proposal development. Up to $125.0 million will be provided to the Fund in NDFC. Evaluation and audits will cost $0.672 million and inflation and contingency are estimated at $7.480 million.

5. Local Currency Contribution

The GOP's total contribution from the Annual Development Budget over the period 1988-1998 is estimated to be $13.6 million. This amount will include salaries and other costs for GOP staff members of the institutions implementing the project. Most of these costs could be covered by loan analysis fees and/or a small spread on the rate of interest paid by subborrowers from the Fund. Alternatively, these costs could be included as part of the Annual Development Budget in future years. Local currency totaling approximately $400 million will be required to finance power plant construction costs. Work done by consultants during preparation of the project paper suggests that these rupee loans will be made primarily by the local nationalized banks and development financial institutions which are owned by the Government.

6. Other Donor Contribution

The World Bank has taken responsibility for lining up other donor contributions to the Fund. The Bank will provide $150 million and USAID understands the Fund is scheduled to receive contributions from Japan ($150 million), ODA ($50 million), Italy ($50 million), and Canada ($30 million). These illustrative levels of contributions could change as each donor finalizes its agreement with the GOP.

7. Private Sector Counterparts Funds

The ICI will use the Fund to finance up to 30 percent of each subproject's capital cost from donor contributions. Consequently it is expected that the total of $550 million that will be raised initially in the Fund would leverage approximately $1.400 billion of private and public sector counterpart funds in local and foreign currencies.

8. Recurrent Costs

The GOP recurrent costs include operational staff and equipment maintenance. These GOP costs are expected to be covered by subproject loan

appraisal fees to be collected by the ICI upon loan application. An additional source of revenues for these costs will be the interest spread (approximately $6.25 million) assigned to the ICI under the general on-lending terms discussed in III.C.2. Alternatively, the GOP could fund project related recurrent costs from the Annual Development Budget. Recurrent costs will be quite low during year 1-5 and should not exceed $500,000/year during year 6-10.

9. NDFC Financial Analysis

In accordance with AID Handbook 3, Appendix 3D, 6.0 on intermediate credit institutions, a financial analysis of NDFC's existing operations (see Appendix J) was carried out to assess the NDFC's capability to act as the intermediate credit institution for the private sector power project. The analysis shows that NDFC is a financially viable institution.

NDFC receives income from a number of sources including loan activities, investments in government securities, underwriting, commissions, and fees. Its earnings spread (the difference between total activity and total financial expenses) has averaged 4.6 percent during the last six years. Its interest rate spread has been lower during the same period, but has been adequate, averaging 2.4 percent. NDFC's debt/equity ratio during the period 1981 through 1986 ranged from an extremely low 3.8 in 1981 to 5.0 in 1983. Recent ADB estimates for NDFC's debt/equity ratio show slight increase for the next four years culminating in a projected ratio of 4.9 in 1991, well within normal ranges for ICIs.

Foreign exchange risk on all NDFC transactions is allayed by forward purchasing foreign exchange cover from the State Bank. The cost of this insurance varies for each of the world's major currencies. The current rate for U.S. Dollars is 3.25 percent. GOP fees for locking in foreign exchange coverage are re-examined periodically. When the fee is changed, people wishing to maintain their foreign exchange insurance must bear the new rate.

F. Evaluation Plan

1. FY 1991 Evaluation

The FY 1991 evaluation will examine the validity of project assumptions and make recommendations for project continuation. The following will be examined:

a. The commitment of the GOP to include private power in the national system as evidenced by a willingness to provide reasonable PPA terms, release sufficient rupee funding through the banking system, allow access to favorable fuel supplies (low-BTU gas, low-head hydro, etc.) and staff the institutions required for effective implementation.

b. The interest and capability of the private sector to propose viable subprojects which require substantial equity investments from local and foreign resources.

c. The availability of local and foreign exchange financial resources from private sector sources.

d. The efficiency and effectiveness of the GOP subproject review and negotiations process and ICI functions of the Fund.

No private power plants will be operational by this time. However, if one or more of the subprojects now being considered are approved, they might be in the construction stage so that the ability of the ICI to process loans and carefully monitor the disbursement process could be measured.

2. FY 1993 Evaluation

The second evaluation will assess the performance of the Fund and the effectiveness of the private sector in implementing subprojects per agreed upon terms. This evaluation will come at an important juncture in the Project since by this time:

a. The project institutions should be fully operational with only modest technical assistance.

b. Up to seven subprojects should have completed the process of tenders, proposal submissions, evaluations, and PPA contract negotiations.

c. Several subprojects should be in operation.

3. FY 1995 Evaluation

This evaluation will focus on the on-going operation of the GOP approval process, the operation of the Fund, the status of loans with emphasis on their financial integrity, and changes in the policy environment resulting from on-going analyses and policy recommendations of the PPC and EW.

4. Final Project Evaluation (FY 1998)

By this time most of the original loans provided by the Fund should be repaid. This review will, therefore, focus on the effectiveness of the Fund as a catalyst for private power subproject implementation and the integrity of the Fund's loan portfolio as measured by prompt loan repayments and a minimum of defaults.

G. Monitoring Plan

USAID will need to balance the need for progress with the AID required levels of reviews and approvals, assuring itself that the project is moving as planned while not requesting unnecessary information which could further slow what could easily become a cumbersome process. A key ingredient for success will be the speedy appraisal of private sector proposals by the GOP to allow approval of loans from the Fund. These reviews must be fair, thorough and in the best interests of the project's goals and purposes. USAID

will need to monitor these reviews to ensure that this is the case. This monitoring plan covers only the first two years of the project. Recommendations for a monitoring plan for subsequent years will be an output of the first formal project evaluation.

1. Monitoring Objectives

Ultimately it will be possible to monitor the Project by measuring contributions to the project goal, i.e., how much additional electricity has been generated. In the first two years, however, it will be more appropriate to measure achievement of the project purpose, i.e., the extent to which private sector technical and managerial resources have been mobilized to meet energy investment needs.

This early monitoring will best be accomplished by a planned review of progress towards the achievement of specific outputs as well as the timely and adequate supply of inputs.

a. Input Monitoring

USAID will monitor: (1) timely provision of long and short-term technical assistance by the contractor; (2) timely recruitment by the contractor and the GOP of professional staff for GOP counterpart agencies; (3) timely procurement of appropriate commodities; (4) timely GOP appointment of officials to counterpart agencies; (5) timely provision of inputs by other donors (contributions to the Fund and financing of required technical assistance); and (6) the timely provision of USAID contributions to the Fund.

b. Output Monitoring

USAID will monitor: (1) the number and quality of proposals received by the GOP; (2) the number and quality of loan reviews carried out by the PED and others; (3) progress of on-going proposals, notably Xenel, Hub Chowki, Pakland and Habibullah (for example, have LOIs been issued, are PPAs being negotiated, and what are the bottlenecks?); (4) drawdown of the Fund by subproject sponsors; (5) the number and quality of policy and other studies being conducted; and (6) the number and quality of requests for proposals or other tenders issued by the PPC for private sector proposals.

2. Monitoring Methods

a. Persons Responsible

The Mission proposes to delegate much of the day-to-day implementation responsibilities to the Project Coordinator (PC). The PC will provide information needed by the Mission to effectively monitor progress. He/she will report to the Project Manager, who will be an FSN in the Office of Energy and Environment. The FSN in turn will report to the Power Division Chief, a USDH. The Division Chief will be responsible for ensuring effective monitoring of the project. An illustrative schedule is presented in Section c below; this will undoubtedly be amended several times to take into account the exigencies of the project as it unfolds.

b. Data Gathering

The Project Officer will acquire data needed to monitor the project from a number of sources. Some of these sources would include:

- Daily/weekly meetings with the Project Coordinator;
- Monthly/quarterly reports from the Project Coordinator
- Monthly/quarterly meetings with long term advisors plus the Project Coordinator and any Pakistani or U.S. short term experts whose presence would be helpful;
- As-needed visits to key GOP/WAPDA officials, usually accompanied by the Project Coordinator;
- As-needed visits to the Fund, usually accompanied by the resident advisors or the Project Coordinator;
- Site visits to potential plant sites;
- Meetings with potential expatriate and Pakistani power investors;
- Meetings with other donor counterparts;
- Field visits to evaluate the technical and financial claims of potential users of the Fund (This tool will be used sparingly, since monitoring of proposal claims is not the primary responsibility of USAID, but of the Fund. However, in the early years of implementation, the Mission plans spot checks in this area.); and
- Semi-annual Mission Project Implementation Reviews (for which the Mission's PROMIS and ISS computer assisted monitoring systems will be used).

c. Illustrative Monitoring Schedule

A possible schedule of activities for monitoring progress towards provision of inputs and achievement of outputs is provided below: It describes the activities to be undertaken by the Project Officer, reporting to the Division Chief.

Activity	Frequency	1. Inputs/2. Outputs Monitored
Meetings of Project Coordinator (Making inputs to PROMIS and ISS)	As needed, at least weekly	1. Provision of technical assistance and commodities by the Advisory Team and GOP. Assessment of quality of TA and GOP staffing. Early identification of constraints.

		2. Overview of progress on all outputs (Project Coordinator responsible for gathering information from respective long term advisors.)
Meetings of all Long-Term Advisors	Monthly initially; quarterly later	1. Overview of constraints to speedy input delivery; detailed discussion of solutions.
		2. Analysis of quality and quantity of outputs by relevant institutions.
Visits to PPC/WPPC	As needed, irregularly	Personal confirmation of information; assessment of quality of TA.
Visits to the Fund/ potential sites	As needed, infrequently	Spot checking of ICI funding process;
Meetings with Private Sector	As needed,and/ or requested by Private Sector	Assessment of level of comfort/ confidence of potential and actual proposers. Identification of bottlenecks and potential problems.
Meetings of donor counterparts	As needed, at least semi-annually in the first 2 years	Review of resources available to the Fund and use of these resources; mutual assessment of progress towards outputs; identification of policy issues; and coordinated responses to policy issues.
Visits to confirm proposal/loan application claims	Very infrequently	Spot check on quality of proposals, and loan applications.
Visits to subproject construction sites	Very infrequently	Spot check of construction progress to assess implementation effectiveness.
USAID Project Implementation Reviews, using PROMIS and ISS outputs	Semi-annually	Presentation to Mission of total monitoring findings; decisions on overcoming constraints.

3. Future Refinements

The purpose of a monitoring plan is to identify and quantify the actions and sites over which cognizance is required and to deploy available staff, in a rational and systematic manner. If successful, the result will be a good grasp of what is happening in the Project.

It is not possible to identify or quantify most actions and sites for subprojects today, because investors have yet to be identified; hence, this monitoring plan is not complete. As subprojects are identified, the requirements for monitoring (frequency, scope, and personnel available) will also be identified.

V. Project Analyses

A. Technical Analysis

1. Summary

In this analysis the Mission examines the feasibility of the Project as designed. The benefits are presented, followed by the risks of the project. The constraints are examined and the way in which the project will overcome those constraints identified. Material from the World Bank Staff Appraisal Report has been included. The analysis concludes that the benefits outweigh the risks, and that the Project as designed is technically feasible, either as a stand alone, or as a part of a multi-donor project.

2. Benefits

a. Energy Benefits

The proposed project will assist the GOP in attracting the participation of the PS in power development. It will facilitate the achievement of the objectives of the Seventh Plan, and create the framework and procedures during the Seventh Plan that could lead to an even bigger PS participation during the Eighth Plan. By almost certainly leading to the introduction of fluidized bed combustion technology for using low-quality domestic coal in power generation and state-of-the-art coal mining and oil/gas production techniques, the proposed project can assist in overcoming the technological barriers to energy development currently being experienced by the public sector agencies.

b. Financial Benefits

The proposed project will also introduce the concept of limited recourse financing to Pakistan which may later be applied to other sectors, particularly industry and transport. The Fund to be created will mobilize resources for future energy development by recycling the revenues attributable to the interest rate spreads. These funds could be leveraged to mobilize additional resources for financing future PS energy subprojects through the Fund, if the proposed study for assessing the future structure for the Fund recommends its evolution into a separate energy development finance institution.

c. Decreased/Eliminated Loadshedding

Without investment from the PS, the energy demand/supply gap

cannot be bridged. For almost a decade WAPDA and KESC have been unable to meet Pakistan's full electricity needs. Load shedding is a fact of life, reaching as high as 1,600 MW, (equivalent to about 28 percent of peak load) for brief periods. The capital investment required for WAPDA's plans to eliminate load shedding by the early 1990s is more than twice WAPDA's current annual investment levels. It seems unlikely that the GOP will double WAPDA's investment budget. The GOP's rupee shortage has prompted the private sector power policy.

The GOP expects the demand for electricity to increase by 11 percent each year from 1988 to 1993, to a maximum of almost 9,300 MW (from about 5,500 MW in 1988). (USAID believes the 1993 demand could be reduced by 7 percent to 8,600 MW through an effective energy conservation and load management program.)

The Seventh Five Year Plan calls for an increase of about 5,000 MW. However, USAID does not expect this target to be met, because it ignores the financial and management constraints which have kept WAPDA and KESC from meeting expansion targets in the past. During the Sixth Five Year Plan, WAPDA actually installed only 53 percent of its planned thermal power plant expansion program. USAID believes that at most the GOP may meet 70 percent of the planned expansion during the Seventh Five Year Plan period. This would mean an additional 3,500 MW to increase the public sector's total installed capacity to just over 10,200 MW by 1993. Information on this topic is presented in Annex W along with anticipated load shedding for the Seventh and Eighth Plan periods. The data shows that even with a large Seventh Plan energy expenditure, load shedding will continue during low water months unless private power plants are built.

d. Broad-based Private Sector Interest

Private power developers from the U.S. and elsewhere are expressing strong interest in sponsoring projects in Pakistan. Over 13 proposals have already been received by the GOP as noted in Section II.D. A list of firms which have expressed interest in private sector power generation subprojects is provided in Annex U. Energy sources for these plants include coal, gas, fuel oil, diesel and hydro. As part of project design activities, USAID has carried out financial modeling to evaluate eight of these private power projects and the results of the analyses are summarized in Annex S.

3. Risks

One of the risks associated with the proposed project is that there may not be enough subprojects to fully utilize the loans and grants made to GOP to finance the Fund. In fact, this is not likely to be a problem. Subprojects for which letters of intent have already been issued could use about US$240 million from the multi-donor Fund. Another US$110 million could be committed to subprojects which are being actively reviewed by the GOP. There are other proposals under preparation whose total cost is estimated to amount to US$600 million, and which would be seeking approximately US$150 in loans from the Fund. As a result, approximately US$500 of the Fund's

resources of US$550 million could be used by proposals already prepared. This subproject pipeline has been built up prior even to the establishment of the Fund; further subproject proposals will almost certainly be generated after the Fund's establishment. With this level of demand there seems little doubt that AID's contribution, to be used only for US or Pakistani goods and services, will be fully used.

A second risk is that the proposed subprojects may severely strain the ability of the financial institutions to cover the local cost financing requirements. The subprojects are expected to require a total of about US$700 million equivalent in local financing. This is about US$130 million per year in the first three years, tapering down to US$100 million equivalent per year during the remaining years. To meet these requirements, the Seventh Plan has allowed for credit expansion to accommodate the incremental financing needs of PS energy subprojects. To guard against overburdening the financing capabilities of the Pakistani institutions, PS investors are required to provide an undertaking that gaps in local financing would, if necessary, be covered by funds from outside Pakistan to ensure timely implementation of subprojects. At a later date to be decided by the investors, the Fund and NDFC, the foreign financing of local funds could be replaced with loans or equity from Pakistani financial institutions. These measures will minimize the risk of non-availability of funds to finance local costs of subprojects.

A third risk is the possible failure of PS companies to generate the revenue required to cover their financial commitments. Revenue generation is a function of the agreed price and the quantity of electricity to be delivered to power purchasing agencies. The price for the sale of power is stipulated in the PPAs, which are structured to cover operating costs, debt service and to provide returns. Automatic adjustment mechanisms will be introduced into these agreements to ensure that investors are compensated for changes in the costs of their inputs, including the erosion in the value of the rupee relative to foreign currencies. Power sales by PS enterprises will be carried out under a letter of credit to ensure that payments are made in a timely fashion. GOP agencies are unlikely to fail to purchase the quantities stipulated in PPAs since the investment undertaken by PS are needed additions to rather than substitutes for public sector investments and since there is a substantial unsatisfied demand for power. In addition, the PPAs are designed to allow for take-or-pay delivery of specified quantities of power for which GOP would guarantee purchase irrespective of whether the power is taken or not.

4. Constraints to Private Sector Participation

Several social and economic factors constrain the growth of private sector involvement in all sectors of the Pakistani economy. In large part these flow from the nationalization of businesses in the 1970's which resulted in a state controlled indigenous banking sector and a private sector that focuses on short term investment opportunities to the virtual exclusion of long term investment positions. This in turn has led to constraining attitudes, described below:

a. Lack of Trust

Many GOP officials believe the private sector is incapable of building and operating complex facilities. Others expect enterpreneurs to use the private power program to make illicit profits from plant operations and during construction (e.g. through over-invoicing). On the other side, private investors doubt that WAPDA will deal fairly during negotiations (on purchase prices, load factors, etc.) and during operation (dispatching, prompt payment, etc.). The project will use technical advisors and pressure from donors to coax both sides to perform as needed. Distrust will best be overcome once a subproject (no matter how small) is on line with both sides abiding by contractual obligations.

b. Lack of Experience

The introduction of independent operators into a central utility will be a complicated mix of financial, legal and technical factors. Neither the GOP nor the private sector have experience with these matters which is a major reason for the current delays in approving PS proposals. The institutional development component of this project is designed to overcome this constraint.

c. Electricity Tariffs/Realism of Purchase Prices

The average electricity price (including fuel adjustment charges) in Pakistan is approximately 71 paisa/kwh ($0.041/kwh) far too low to meet operational and capital expansion costs. This tariff structure, which reflects an earlier lack of realism in estimating WAPDA's costs, resulted in attempts by the GOP to negotiate PS prices down to levels where subprojects were not profitable enough to attract capital from reputable domestic and international sponsors. The policy dialogue which formed part of the design of this project has already begun to overcome this constraint; conditions imposed by USAID and WB in disbursing for the project will complete the process; no PPAs will be signed for unrealistic purchase prices, either too low or too high.

d. Lack of Sovereign Guarantee

As discussed in detail in III.C.2, the WB has put together a Security Package framework that is designed to overcome the lack of GOP sovereign guarantee, and thus reduce the associated financial constraints to PS investment.

5. Conclusion

The Mission believes the project as designed can overcome the constraints to private sector involvement, and that the benefits outweigh the risks, which in any case have been minimized by careful project design. The project is therefore technically feasible.

B. INSTITUTIONAL AND ADMINISTRATIVE ANALYSES

1. Institutional Development

As indicated in Section IV.B, the Project was structured to minimize the need to create new institutions by building on existing agencies and review procedures already established review PS proposals. Specifically, the PPC will be an expansion of the Additional Secretary of Power's office in the MWP, which already develops and implements private power policy. The WPPC is already in place on paper (i.e., approved but operating with staff temporarily seconded from other offices) reflecting WAPDA's recognition of the need for an organization to interface with PS firms. The Energy Wing of the Planning Commission is an active organization which has assumed responsibility for national energy planning with technical assistance from USAID's Energy Planning and Development Project. NDFC is a successful and well organized development finance institution (DFI) which has mobilized local savings and channeled over $200 million of foreign assistance funds to Pakistan's industrial and small business sectors. Building on established entities will simplify the administration of a complex project. The fact that both the PPC and the WPPC in WAPDA are within the control of the Ministry of Water and Power will also facilitate project management.

2. Overall Coordination

Responsibility for coordination of the project will be with the Economic Affairs Division (EAD) of the Ministry of Finance. EAD will sign the project agreement, project amendments, the first implementation letter, and all subsequent implementation letters or project amendments. EAD will coordinate its activities closely with the MWP and NDFC. The MWP will coordinate the institutional development activities carried out in the PPC, WPPC, PED, and EW.

EAD will delegate responsibility for day to day implementation activities to an authorized signatory in each GOP entity receiving institutional development assistance under this project. The authorized signatories in each institution will be: the Director General for Private Power in the Ministry of Water and Power; the Director of the WPPC; the Senior Chief of the Energy Wing in the Ministry of Planning; and the Senior Executive Vice President of the PED in NDFC.

The rolls and responsibilities of the recipient entities are described in Section III.C.1.

The Director General for Private Power in the MWP will be key to project success. This person will bring pressure to bear on all organizations involved in the project concept to cooperate and perform in good faith. Strengthened by the Resident Advisory Team, the short term consultants and the USAID Project Coordinator, the Director General will guide proposals through WAPDA and the Energy Wing, as well as through his own ministry. He will maintain pressure on the WPPC to negotiate in good faith. In short, he will

be the subproject advocate.

Another key individual will be the Senior Executive VP of the PED. He will play the role of ensuring that the Energy Development Fund is operated properly and that appropriate loans and made to well qualified proposals in a timely fashion.

Effective and appropriate administrative mechanisms have been or will be established to meet the unique PSP implementation requirements. The relevant organizations have the required administrative systems and authority to implement the project. Staff competence will be enhanced with training and technical assistance. The project is therefore considered administratively feasible and sound.

C. SOCIAL AND ENVIRONMENTAL ANALYSES:

1. Existing Environmental Requirements

The Pakistan Environmental Ordinance of 1983 (No.XXXVII) initiated the GOP's national environmental policy. Policy and standards approval is under the purview of the Pakistan Environmental Protection Council. Standards development and enforcement and other environmental programs are administered by the Environmental and Urban Affairs Division of the Ministry of Housing and Works. To date only draft standards have been proposed that would restrict the discharge of pollutants into the atmosphere and water. However, both the Federal and Provincial Governments have established legislation governing antiquities, endangered species, national parks, wildlife sanctuaries, game reserves, forestry and water management.

2. Subproject Requirements

All subprojects requesting loans from the Fund will be evaluated based on environmental guidelines to be issued by the GOP in the form of a brochure based on WB and AID standards. For details see Section III.C.2.d. and Annex T. Subprojects using AID funds must comply with 22CFR216, PD-6, Executive Order 12114, Section 118 of the Foreign Assistance Act of 1961 and Section 119 of the International Environmental Protection Act of 1983; subprojects receiving World Bank funds must comply with Occupational Safety and Health Guidelines (1980), and Environmental Guidelines (1984). It will be the work of the PED and its consultants to ensure compliance with these guidelines.

3. Conclusions

In general, power subprojects are not expected to have a significant impact on the air, water, ecological and social resources of Pakistan; transboundary impacts are also not expected to be significant. In any case, each subproject will be evaluated based on Environmental Guidelines designed to ensure cost-effective environmental protection; donors will not approve loan applications for subprojects that exceed social and environmental

limits. With these provisions, the project is deemed socially and environmentally sound.

D. ECONOMIC ANALYSIS

1. Results

The analysis examines four types of generation plants under three cases portraying the status of the overall power supply system. The four plants cover the most important types likely to be proposed under this project. The three cases cover all possible system conditions with the focus on the "short" or base case where generation is insufficient to meet demand as is currently occurring. As discussed below, most of the basic parameters and values used in the analysis are based on conservative assumptions so that it is likely that the results are lower bound estimates of the actual returns.

The analysis estimates the economic internal rate of return for all plant types to range from 27 to 86 percent for the most relevant "short" case. These plants also have attractive returns in the "balanced" case (though such a situation is unlikely to be attained in the medium term). Furthermore, the returns are still attractive under the very unlikely and worst situation of the "long" case. These results (see Table 1 below) indicate the very high economic value of electricity in Pakistan. Sensitivity analysis found these results to be quite robust with the returns under the "short" case never falling below 20 percent for the base load plants, 50 percent for the combined cycle, and 13 percent for the combustion turbine. The supporting annex presents all of the details including the 20 year time stream of benefits and costs for each plant under each case.

2. Background

a. Project Background and Rationale: For the past few years, Pakistan has been experiencing severe shortages of power during peak demand periods. These capacity shortages have ranged up to 1600 MW. In addition to the capacity shortages, there are currently energy shortages of about 250 GWh, about 1 percent of total generation. A cost of load shedding study that analyzed the industrial sector found that the loss to value-added was 0.88 percent of GDP, i.e., on the order of $350 million. Some economists believe that a smaller number is more appropriate (i.e., on the order of $50-80 million).

The potential demand for electricity is predicted to continue growing rapidly; current estimates being in the range of 10 to 11 percent per year. Efforts directed at energy conservation and load management may reduce this growth rate to the 9 to 10 percent range. Factors contributing to this growth in electricity demand include: 1) a relatively high (7 percent) sustained growth rate of GDP (projected to continue at about 6.5 percent per year); 2) the GOP's commitment to eliminate load shedding, to electrify 90 percent of villages by June 1990 and to provide service to everyone in urban areas; and 3) pricing policies and cross-subsidization of various consumer classes.

b. Public Sector Investment Plans: The draft Seventh Five Year Plan shows a WAPDA/KESC investment plan of Rs 52.7 billion ($3 billion) for power generation purposes. The projection for this period includes 1,330 MW of private power consisting of the Xenel/NIDC plants (1,200 MW) and other small power plants (130 MW). With completion of these units and full implementation of the WAPDA/KESC program (a heroic assumption at the very least), the system would still be short of peak capacity by more than 800 MW at the end of the plan.

If the WAPDA/KESC investment plan is only partially implemented, then the electric supply situation could deteriorate significantly. At 65 percent implementation (i.e. about 3,500 MW of new WAPDA/KESC capacity), peak capacity load shedding would reach 3,500 MW on the standard forecast and 2,800 MW even with load management.

c. Private Sector Power (PSP): Given the severe persistent energy shortages in the country, the GOP decided in principle in 1985 to open the power generation sector to private firms. The rising budget deficit for 1986/87 (8.8 percent of GDP) reveals the dilemma faced by the government--i.e., lack of adequate resources for the country's development priorities in all sectors. This problem is particularly critical for the energy sector given the anticipated increase in effective demand. A private power program would help the GOP meet a portion of this growing demand, and reduce the severity of future energy shortages due to partial implementation of the public sector's investment plan.

In keeping with the GOP's desire to increase private sector participation in power generation and also to help mobilize additional domestic resources, USAID became involved in the development of the Project. A program that could be funded entirely by USAID's contributions to the Fund would reduce peak capacity load shedding to about 3,000 MW by the end of the next plan period. More important, energy shortages would be reduced by 10 percent by the USAID program without load management, and by more than one-third if load management takes place. A larger scale program, the type envisioned specifically by the current efforts of the WB and EW planners, would further reduce the impact of 65 percent success in WAPDA's investment program. For peak demand, capacity shortages would fall to 2,200 MW without load management and 1,600 MW with it.

d. Impacts of PSP: A private sector power generation program would have the following effects on the Pakistan economy:

- Private domestic equity, foreign equity, and foreign exchange loan flows would be mobilized for the power generation sector.

- Output of industrial and agricultural commodities would be increased as a result of more power and increased reliability of power at intermediate and base loads.

- Economic costs of load shedding would be reduced.

- Foreign exchange savings would be increased due to greater fuel efficiency and use of domestic resources (i.e., use of fuel oil in steam plants rather than High Speed Diesel in turbines).

3. Assumptions - The Power System, Market and Institutional Setting

This analysis of the economic rates of return of potential projects that would be financed under the Private Power Project is based on several critical and internally consistent background assumptions that set the context for the economic analysis of any private power investment in Pakistan. These assumptions concern various important aspects of the market place, the power system, and the institutional setting. Some of these, in particular the implementation constraints, are well recognized.

a. Generation Shortfalls due to Implementation and Financing Constraints

Existing electricity supply does not meet demand due to unplanned outages of generating plants and the need to shed load as existing capacity falls short of on-line demand. The chronic nature of this problem persists as capacity expansion continues to fall short of demand growth. The chronic shortfall in capacity to meet both actual (on-line) and potential demand stems from constraints on the financing/resource mobilization capabilities of WAPDA and Government and the implementation capacity of WAPDA. Government has serious resource mobilization problems and WAPDA has failed to meet capacity expansion needs during the last plan period. The new draft 7th Five Year Plan discusses these limitations. There is no reasonable scenario that provides for WAPDA's implementation capacity to grow sufficiently and public sector financing to be available to both overcome the existing shortfall and to meet the growing demand in the near term. If only public financed and implemented capacity happens, there will be shortfalls of large magnitude and long duration. This project, as described elsewhere in the Paper, addresses both dimensions of this problem. It provides debt financing to stimulate the movement of private equity resources to the sector. The Project will also change the regulatory and institutional framework to allow private capacity implementation and ownership.

b. WAPDA and GOP Capacity

As discussed above, it is not realistic to hypothesize a scenario under which Government and WAPDA will have the financing and implementation capability to prevent shortages in capacity over the period of the next five years and beyond. Thus the need for private power. The GOP-WAPDA limitations may easily lead, over the period of the next five years, to a need for 3,000 MW of private power capacity or more based on the already planned for private contribution of about 1,300 MW plus completion of about 65 percent of the public sector goals in the 7th Five Year Plan.

The shortfall will be difficult to eliminate, as demand is ever growing (about 10 percent per year); therefore, there will likely be a continuing need for

private financing and implementation capacity. This need will, of course, vary with the specific amount of the capacity shortfall in any time period. It is important to note (as is explained in more detail below) that the economic efficiency or attractiveness of the flow of funds from the project loan facility will be assured by the fact that all private power projects will be selected from the set of projects which make up the least cost expansion path for power projects in Pakistan and also by the fact that each individual private project will be compared against WAPDA's cost of constructing the same plant and the costs of other private power proposals. This project analysis (as described in the next subsection) will be undertaken in the context of least cost power planning analysis where all plant investment candidates, public and private, are analyzed together in a total system model. This least cost planning analysis covers all important economic considerations for determining the optimal generation expansion path. Such considerations include factors like shadow prices on foreign exchange, local labor and publ implementation constraints. The important point is that while the WAPDA-GOP capability to finance and implement new generating capacity will effect the total need for private power, it will not effect the economics of any particular plant investment once it has been selected. Consequently, the economic analysis of this project can focus on the economics of various representative plants without needing to consider how much, in total, private generation will contribute. This issue of the private power investments being part of the least cost expansion plan is outlined below in paragraph 3.

c. Rational Capacity Expansion - Private Power Plants are Only Selected If They Fit the Least Cost Plan

WAPDA now has capability to plan the least cost capacity expansion of the power system. Under the technical assistance component of this Project, this capacity will be strengthened. Existing systems planning models and methodology will be augmented, and skilled and experienced personnel will analyze all investment options, both public and private of different scales, locations and technologies to determine the least cost generation expansion plan. This plan will be regularly updated to reflect changes on the supply side (as investment proposals are brought forth through the private power initiative) and on the demand side (as demand evolves and changes are made in the forecast). This forward looking planning will also provide information on the types, sizes and locations of power plants that will be needed by the system in the future. Such information can be made available to the private sector as a stimulus for them to come forward with appropriate investment proposals.

It must be emphasized that only plants which survive this planning process and are part of a least cost plan will be selected for new public or private power plants. Moreover, the least cost system operation and dispatch procedures ensure that, once the plants are in the system, they will be operated as they can be best used, subject to technical constraints, and hence yield the maximum benefits for the system. This means for example, that if a private base load plant is chosen and built it will operate as a high load factor base load plant (e.g. minimum of 60 percent or greater - up to technical

limitations). From the perspective of economic returns, least cost planning and system operation means that the analysis is independent of whether the plant is public or private if costs and benefits are evaluated with economic prices. Furthermore, this suggests that the economic risks are largely on the demand side as is discussed next.

d. The Economic Risk is on the Demand Side

The least cost planning and operations methodology, together with the people and procedures to be strengthened by this Project, can ensure that only least cost (in the overall power systems sense) private power plants are built and efficiently operated by this project. However, these people and procedures cannot ensure that demand will grow as projected; therefore, the implications of higher or lower demand growth must be considered. The real concern in the medium term, which this analysis addresses below, is lower growth because with higher demand the shortfall will increase, the investments will look better now, and more investment will be needed. On the other hand, if growth slows, and capacity catches up to a no shortfall position and additional capacity is still being brought onstream, the cost risk is to have partially idle capacity, for a period of time, and hence lower economic returns. Therefore, it is useful to examine the impact of this possible risk in Pakistan and what it might mean for a particular private power plant investment.

Current WAPDA system capacity in Pakistan is about 5,500 MW while demand is growing at about 10 percent per year. Therefore, just to prevent the shortfall from increasing, new capacity of about 550 MW must be added annually. However, assume by some very unlikely set of events that capacity was installed quickly and the shortfall vanished. That is, assume the system is in balance and growing, but suddenly demand growth decreases by half which means that only 275 MW of new capacity is needed for this year. What does such a scenario imply? Comparing this 275 MW with the size of the plants likely to be commissioned (50 to 600 MW) suggests that in the worst case the start of major expenditures for plants in development will be moved back and that plants coming on stream will run at less than planned capacity for only a few years until demand quickly catches up to supply. Analysis presented below indicates the effect of this condition on the economic return.

4. Economic Analysis Approach

a. Power System Scenarios

In the decision process for actual investments under this project, new investments will be analyzed using complex power systems planning methodologies. For the purposes of this paper such procedures are not needed. At this stage we are not concerned with optimal selection of particular plant investments but rather indicative measures of the economic returns and whether these returns surpass reasonable targets for investment. Estimates of such indicative measures can be made by examining illustrative plant investments. Given the extreme current shortages present in Pakistan

and the nature of the current plants in the system, the focus should be primarily on base load and intermediate load plants. However, the analysis also considers peaking plants. These illustrative plant investments are considered in the context of three possible power system conditions assumed to prevail at the time of plant commissioning. These are:

- Plant Operates in a System in Shortage (which lasts five years); this situation is called Case 1 or the "short" case.

- Plant Operates in a System in Balance (which remains in balance); this situation is called Case 2 or the "balanced" case.

- Plant Operates in a System that is briefly long (surplus generation for two years); this situation is called Case 3 or the "long" case.

Obviously, given the current situation in Pakistan, the most relevant context likely to hold for the near term is Case 1 which is referred to below as the base case.

b. Types of Plants

Although a wide variety of plants will be proposed, there are a limited number of different types with regards to their operation in the context of the overall power system: (i.) base load plants which operate almost continually, (ii.) peaking plants which operate during the peak demand periods, and (iii.) combined cycle plants that operate during intermediate peak periods. Proposed plants will generally fit into one of these categories with the major differences being size and type of fuel. In the representative economic analysis presented below, the spectrum of possible private sector plants is covered by considering the following plants:

- Base Load Steam Turbine using Coal - 55 MW.

- Base Load Steam Turbine using #6 Fuel Oil - 100 MW.

- Combined Cycle using Diesel (HSD) - three 30 MW.

- Combustion (Gas) Turbine using Diesel (HSD) - 20 MW.

The choice of these representative plants, their capital and operating costs, their operating schedules, their benefits and their general use of and need for inputs was made purposely to be conservative. For example, in case 1 - the base case, the generation shortage is expected to continue for only five years and then gradually disappear over the next five years, while the analysis covers a 20 year time period. In addition, plants that will use natural gas or that will cogenerate are not considered because their economics will be more attractive than the plants examined. Another important example

is that the estimates of the benefits used are low by international standards. Electricity tariffs in Pakistan are quite low, and the Pakistan-specific data needed to estimate the willingness to pay (WTP) or value of electricity are not available. Therefore, low (or what may be considered minimum) WTP are used rather than using higher amounts based on extrapolations from other developing countries. Hence, the results, while not being worst case, represent lower bounds on the economic rates of return, and the basic parameters used in the analysis can very easily be altered to obtain higher results.

Furthermore, it should be noted that the economic analysis presented below estimates the returns not only on the capital cost of the generation plant but also on the accompanying transmission and distribution (T&D) capital. This approach reflects the indivisibility of generation and T&D capital in that each requires the other to supply electricity (except when the T&D capital expenditure is delayed several years during the generation shortage period).

c. Costs

The capital, fuel, operating and maintenance costs used in the analysis are based on three sources: (i.) the input data for power system planning work done by the World Bank for Pakistan in 1986, (ii.) an internal World Bank memorandum on typical costs of power system components, and (iii.) financial data submitted on proposed private generation projects in Pakistan. The supporting annex for this analysis presents the full references for this data and a table which compares data from each of these sources with the data used in this analysis. The plant load factors used are: 60 percent for the base load plants, 50 percent for the combined cycle, and 25 percent for the combustion turbine.

5. Benefit or Willingness to Pay (WTP) Estimates

There are three types of benefits from investment in electric power generation in Pakistan. Two of these are on the demand side.

The first of these is the benefit associated with electricity consumption when the system is balanced (i.e. when supply can meet the demand) as in Case 2 or during off-peak generation for the "short" case (Case No. 1). The benefit of electricity generated in this case is valued at the customer's willingness to pay where this WTP is higher during peak periods when electricity is more important (e.g. lighting during dinner).

The second demand side benefit results from avoiding outage costs or, in other words, from the value of meeting unserved energy (UE) which could not have been met without the investment. The value of UE is always higher than willingness to pay as it incorporates the value of not being cut off or denied electricity. For productive uses, the value of meeting UE is based on avoiding important losses (e.g. material wasted, lost labor and equipment productivity, etc.) when electricity is cut off (an unplanned outage or load shedding). For consumptive (household) uses, the outage cost is based on the

high premium consumers would be willing to pay to avoid the inconveniences of outages and of having access to non-interrupted electricity service. The value of UE has been consistently found in numerous studies to have a much higher value than WTP.

In a "short" system, there is a chronic situation of unserved energy. In addition, it is important to note that even in a balanced or "long" system UE can occur and there is a need to meet UE. UE occurs in "long" systems because electricity demand varies continuously during both peak and off-peak periods. Outages (UE) can only be avoided by having the technical capability to instantly respond to load variations. Both combustion turbines and combined cycles have such capabilities and, therefore, receive credit for meeting UE whereas steam turbine plants (once their spinning reserve is used) are much slower in their start-up and slow-down times and hence are not well suited for quick adjustments to the ever changing demand for power.

In addition to the two demand side benefits outlined above, there are also supply side benefits when excess capacity temporarily exists (the "long" Case 3). The supply side benefit for the "long" case occurs because of fuel savings. These savings vary with the type of plant and its fuel type. The fuel savings come from running one plant because it is more efficient than another plant which could also be run to meet the same demand.

In the economic analysis, the benefits (and costs) of the operation of each of the four different representative plants is estimated for each of the three cases: short, balanced, and long. The total benefits for each plant under each case is a function of which type of benefits are credited for which segments of the plant's generation. For example, the generation of a combustion turbine under the short and balanced cases is valued at the cost of UE. The generation of a base load plant using either coal or fuel oil under the balanced case is valued at the average WTP whereas under the short case 20 percent (peak generation) is valued at UE and the rest at average WTP. This approach captures the essential aspects of how the plant fits into the overall operation of the national grid. The annex provides details on how these benefits were estimated.

The willingness to pay estimates are based on work currently being performed for the revision of the Rural Electrification Master Plan for Pakistan. The average WTP used is about 2 Rs/kwh or about 0.12 $/kwh; the WTP by sector and for peak periods varies from 0.10 to 0.15 $/kwh. These amounts are quite conservative as, for example, a recent study in Bangladesh used an average WTP of about 0.22 $/kwh.

The cost of unserved energy is based on a study performed under the USAID Power Distribution Project. The cost of 4 Rs/kwh used is a recalculation of some of the basic data provided in this study and is a lower value than any of the results presented in the original study.

The value of fuel savings, which plays a minor role in the results, is based on the differences in fuel costs between coal, fuel oil and diesel.

Table 1 presents information on the economic internal rate of return for each of the three types of plants (i.e., base, intermediate, and peaking plants) considered for each of the three possible power system cases (i.e, "short", "balanced" and "long").

PAKISTAN

PRIVATE POWER PROJECT

ECONOMIC ANALYSIS

TABLE I - ECONOMIC INTERNAL RATE OF RETURN

	CASE 1 BASE CASE(*) "short"	CASE 2 "balanced"	CASE 3 "long"
1. STEAM TURBINES			
COAL	27 %	16 %	16 %
#6 Fuel Oil	37 %	22 %	20 %
2. COMBINED CYCLE			
Diesel (HSD)	72 %	26 %	24 %
3. COMBUSTION TURBINE			
Diesel (HSD)	86 %		50 %

(*) Case 1 on the **BASE CASE** represents the current situation where the country has insufficient power generation capacity or is "short" on power. The base case is the most relevant picture of the current situation.

6. Discussion of the Results

The results of the analysis indicate that the provision of additional generation is very attractive economically. Under the base case where there is a shortage of generation capacity, the representative plants have internal rates of return (EIRR) ranging from 27 to 86 percent. Table 1 presents the EIRR for the four representative plants under the three case situations. The most relevant or base case for the term of this project is the short case because capacity is needed not only to meet the current shortage but also to meet a growing demand.

The higher returns are for the plants that generate a larger percentage of their power output during the peak period when the value of power is the highest. The returns to meeting "unserved energy" as discussed above are very large as indicated by the returns for the combustion turbine (CT) peaking plant whose output is valued entirely at that of unserved energy. The combined cycle (CC) plant shows a similar return to that of the CT because a large part of its generation is also valued at unserved energy. The steam base load plants have the lower returns though still very attractive because relatively less of their output is valued at unserved energy and most of their output is valued at average willingness-to-pay (WTP).

In this analysis, the average WTP has been estimated very conservatively. Small increases in the WTP would substantially raise the returns. The coal steam plant has lower returns than the fuel oil steam plant primarily because of the high price ($45/mt) of coal used. Despite this high price, a coal plant is still an attractive investment.

Under Case 2, the balanced situation, the returns are sill attractive. The returns are less than in the short case because only the CT receives substantial credit for meeting unserved energy. The two base load plants' returns are based solely on the conservative level of average WTP which is about one half of the value of meeting unserved energy. That these plants are still attractive is evidence of the high returns to electricity generation overall, whether the plants are public or private investments. Such returns are the justification for the large amounts of public investment in this sector. The CC plant has a higher return than steam plants since it is designed and used for meeting the higher value peak power demands. This is because a small amount of its output (conservatively 5 percent) is valued at meeting unserved energy and 20 percent at peak WTP (which is 50% higher than average WTP).

Under Case 3, the long situation, the plants still show returns in excess of 15 percent. For base load plants, the lower returns are due to receiving only fuel savings credit for 2/3 and then 1/3 of their generation in each of the first two years. For the CC and CT plants, the lower returns are due to lower operating levels of in the first two years. After the first two years, the value of electricity is assumed to be the same as that used in Case 2. The relatively small decrease in the returns is mostly due to the assumption that the "long" situation will only persist for two years. As discussed above, having a long case last for many more years is very unlikely. Even if the

long case does persist for two years. As discussed above, having a long case last for many more years is very unlikely. Even if the long case does persist for more years, it would take well many years for any of the returns to fall below 10 percent.

These results are, of course, very sensitive to the value of the electricity based on either WTP or meeting unserved energy. The level of fuel savings is not very important and only marginally effects the results for the long case 3. Reducing the value of meeting unserved energy from 4 to 2.635 Rs/Kwh, which is the worst case, the returns decrease in proportion to the plant's output meeting unserved energy. The CT plant suffers the greatest decline, from 85 percent to 13 percent, since all of the CT's output is used to meeting unserved energy. The returns for the other plants decline as follows: for the CC from 72 to 51 percent, for the fuel oil steam from 37 to 31 percent, and for the coal steam from 27 to 22 percent. Despite the severe reduction in the value of meeting unserved energy, all plants still have returns above 10 percent under the base case.

Sensitivity analysis concerning the average WTP is not necessary. Even using these conservative (low) values for the WTP, the plants show attractive EIRR's.

These returns include the capital required for the transmission and distribution (T&D) of the electricity. The T&D costs are about 20 to 30 percent of the total cost of electricity in these examples. This percentage varies depending on the type of plant and the case. For example, in the short case, it is assumed that additional T&D is not needed until the fifth year when the generation shortage begins to end. Both the full amount of T&D and the elimination of the generation shortage is then assumed to take place by year 10. Without the T&D costs, the returns would appear to be much higher. While it is possible to deduct the T&D costs from the end use value (e.g. WTP) of the electricity in order to perform a net-back analysis for generation, this approach would attribute all of the high returns to generation when the supply of electricity is a joint product of the entire power system.

The attached annex presents all of the details of these analyses including the time stream of costs and benefits for each plant under each case.

E. FINANCIAL ANALYSES

1. Background

The Private Sector Power Project will promote socio-economic development in Pakistan through increased electricity generation by mobilizing private sector resources. The private sector will build, own and operate power plants and sell electricity to WAPDA/KESC systems under a set of Power Purchase Agreements (PPAs). These PPAs will be of standard type (below 50 MW) and non-standard type (above 50 MW). A semi-autonomous division, PED, in NDFC will administer a multi-donor Fund that will finance 30% of the total cost of subprojects. Beside the USAID grant of $125 million, another $430 million capital is likely to be contributed to the Fund by WB and other bilateral aid agencies. The sponsors' equity will be 25% of the total cost of subprojects

while the remaining 45% capital required will be raised through suppliers' credits, international commercial loans and through loan/equity contributions by local DFIs.

The local currency requirements are estimated to be 40% of the total subprojects cost. Of the total sponsors' equity, about 50% (i.e. 12.5% of the total subproject costs) will be provided by Pakistani institutional and individual investors in local currency. The remaining 27.5% local currency requirement will be met as follows: (a) 9% to be provided by the State Bank of Pakistan in return for an equivalent amount out of foreign exchange to be provided by the donors to the Fund; (b) 18.5% to be raised through local DFIs.

2. Methodology

To assess the financial viability of the private sector power project, the Internal Rate of Return (IRR) for the total project could be calculated. However, this approach requires that a list of possible subprojects (based on a balanced mix of plant sizes, capital costs, technologies, fuels, life of the plant, capacity factors, electricity purchase prices, etc.) be developed. This hypothetical list of projects would be based on the assumption that one subproject will be approved in Year 1, two subprojects in Year 2, four subprojects in Year 3 and the remaining fifteen subprojects in Years 4 to 8. Using this list and the underlying set of assumptions, a stream of cash flows could be projected and IRR calculated. Because the cases were hypothetical only a crude IRR would result.

A more plausible approach, used here, assumes that the project will be financially viable if each of the project's components has an acceptable IRR. This approach involves determining the rate of return of the project components which are the subprojects and the Fund. The financial viability of the Fund can be easily determined by analysing the projected sources and uses of the Fund. To determine whether the subprojects meet the financial soundness criteria, however, would require a more detailed approach. First a set of representative projects using different fuels, e.g. natural gas, furnace oil, coal, etc. would have to be developed. The IRR for each representative subproject would then have to be calculated and results analyzed.

A report entitled "Case Studies on Private Power in Pakistan" was prepared (under AID/S&T funding) by RCG/Hagler Bailly, Inc. in March 1988. This report presented the "Pakistan Private Power Project Financial Analysis Model". Based on this model, the financial analyses of a number of prospective power projects (based on imported oil, natural gas, coal, etc.) in the private sector was carried out. The model simulates the performance of each project under various operating, financial and fiscal assumptions and calculates the Internal Rate of Return (IRR). See Annex Z.

3. Financial Viability

a. Subprojects

The rate of return calculations for some of the

representative subprojects along with the underlying assumptions are given at Annex Z. The financial attractiveness of each representative subproject as calculated on the basis of different electricity purchase price scenarios is summarized in Table V-1. The FIRR of the 120 MW diesel project is as high as 32.8 percent in one case while that for the 600 MW oil-fired steam turbine-generator project is 21.5 percent. A negative rate of return results in the case of a conventional coal-fired plant. However, it is expected that a positive IRR would result in the case of a coal-fired FBC plant (not considered in the study.) Pyropower's willingness to invest in such a project attests to this belief.

Because of the widespread load shedding there is a shortfall of approximately 4,000 MW of generating capacity which the GOP expects will be met through private power plants from 1988-98. This high market potential, coupled with the incentives being offered by the GOP, has attracted private sponsors who are seriously considering making investments in the utility business in Pakistan. The incentives being offered include the exemption of power generation equipment from import levies and the GOP's decision to treat private power utilities as an industry thus allowing them the fiscal incentives that are available to other industries. During informal discussions, the GOP has indicated that it will consider a rate of return of up to 18 percent while negotiating PPAs. Furthermore, since the draft standard PPA calls for a take-or-pay type purchase arrangement based on a 60 percent load factor, many sponsors are hopeful that they may be able to earn rates of return on equity of 20 percent (or even higher) by operating their plants at 65 or even 70 percent of capacity given the extreme shortage of power existing today and expected in the future. The involvement of multilateral donor bank(s) and bilateral aid agencies has also reduced the perceived risks associated with investments in this sector. Last, but not least, the draft PPA makes a provision for annual increases in power prices due to increases in operating costs such as fuel, labor, interest charges and general increases in the consumer price index. All these factors combined and the attractive rates of return that are expected from subprojects have drawn the private sector to invest in the utility business in Pakistan.

Table V-1
Financial Internal Rate of Return (FIRR) on Various
Representative Private Power Sub-Projects

Item	Description	FIRR (%)		
		Scenario 1	Scenario 2	Scenario 3
1.	120 MW Oil-Fired Diesel Engine System	23.3	32.8	14.0
2.	600 MW Imported Oil-Fired Steam Turbine-Generator	13.8	21.5	7.4
3.	10 MW Gas-Turbine Project	20.5	30.3	12.2
4.	55 MW Coal-Fired Power Project	-6.2	-2.6	-10.7

NOTE: Although a negative rate of return results in the case of a conventional coal-fired plant, this is due to the relatively high electricity generating cost of this project. Only a combination of higher electricity price, higher capacity factor and more favorable tax exemptions could make this project financially attractive. It is worth noting that an American firm (namely Pyropower), which is keen to set up a coal-fired FBC plant, estimates an attractive FIRR at a purchase price of 5.4 cents/kwh.

Assumptions:

1. The life of plant is assumed as 20 years;
2. The purchase price of electricity is assumed as follows:
   a. Under Scenario 1 the price during years 1 to 10 is 5.5 cents/kwh while during years 11-20 it is 4.5 cents/kwh
   b. Under Scenario 2 the price during years 1 to 10 is 6.05 cents/kwh while during years 11-20 it is 4.95 cents/kwh
   c. Under Scenario 3 the price during years 1 to 10 is 5.0 cents/kwh while during years 11-20 it is 4.10 cents/kwh

(b) The Fund

The Fund will onlend to the sponsors of the subprojects at an interest rate of 14 percent. The interest income and subproject appraisal fees will more than cover the cost of debt servicing and operating expenses of the Fund. The excess cash in-flows will result in the accumulation of reserves that will enable the Fund to lend out reflows and finance more private sector initiatives. If and when it is agreed to convert the PED into an autonomous financial institution, PED will undertake equity participation in future subprojects through these accumulated reserves. The Fund is clearly a self-sustaining and a financially viable institution. Table V-2, excerpted from the WB Staff Appraisal Report, gives a forecast of sources and applications of Funds.

The initial source of income to the Fund will be capital raised by the donors and by commitment or loan appraisal fees. These inflows will adequately cover PED's initial operating expenses after disbursements to the sponsors are made. According to the WB estimates, during the first 10 years of the project $354 million would be re-cycled into the Fund on account of interest payments on subproject loans. An additional amount of $13 million would be raised from debt servicing when the subloans start getting repaid from year 9 onward. It is evident that the operating expenses of the Fund amounting to $20 million will be easily met from these sources of funds and (even after debt-servicing of WB and other bilateral loans) will leave an extra $228 million as equity reserves. These reserves will be re-channeled into future private sector energy projects.

Table V-2

SUMMARY FORECAST OF SOURCES AND APPLICATIONS OF FUNDS (FY89-FY98)

(Source: WB's Staff Appraisal Report on the Project)

Sources of Funds	**US$ Million**	**Rs Million**	**%**
Sources of Initial Capital (Subtotal)	539.5	9,442	56
- Capital Raised by Donors *	520.0	9,100	54
- Commitment Fee	5.7	100	1
- Appraisal Fee	13.8	242	1
Reflow of Funds (Subtotal)	418.3	7,321	44
- Interest Income	354.1	6,197	37
- Interest Capitalized	51.2	896	6
- Repayment Received	13.0	228	1
Total Sources	957.8	16,763	100
Applications of Funds			
Disbursements	520.0	9,100	54
Debt Service	189.7	3,320	20
Operating Expenses	20.0	350	2
Equity Reserves	228.2	3,993	24
Total Application of Funds	957.8	16,763	100

* The WB estimate of the capital to be raised through multilateral and bilateral funding sources is different from USAID estimates. However, since the total commitment will become clear after some time only, the numbers may be treated as illustrative at present.

F. Women In Development

The Project is unlikely to have any significant immediate impact on the employment of women, since the power sector is heavily dominated by male managers and skilled and semi-skilled workers. However, employment opportunities are likely to arise for women in the secondary industries that will be attracted to new power plant sites. Increased family incomes that result will also benefit women.

Women will benefit from the additional power generated by the Project. In the home, additional power will be available for cooking, heating, cooling, etc. On farms, women will benefit with their farmer husbands from the increased irrigation made possible by electrified tubewells and by being relieved of the burden of carrying water great distances. Other labor-saving devices may also be introduced as a result of electrification. Women in business will benefit from reduced waiting time for power hookups and reduced losses due to load shedding.

In general it is expected that the Project will have no negative impacts on women in development, while women of all ages and classes will potentially benefit from the Project's major output: more power.

G. Narcotics Impact Statement

None of the anticipated Project activities will have a meaningful connection to the U.S. Government's continued efforts, in conjunction with the GOP, to curtail opium poppy cultivation and the processing of opium into heroin in Pakistan. Poppy is grown in remote mountainous parts of the country, which are largely not now electrified and will not likely receive electricity as a result of Project activities. It is unlikely that any power plants will be proposed for construction areas in which poppies are now grown. Should this be the case, however, the existing poppy clause would preclude the use of AID funds in supporting such a subproject.

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E.O. 12356: N/A
SUBJECT: PRIVATE SECTOR POWER (391-0484): DRAFT PROJECT AUTHORIZATION

REF: STATE 278978

1. EXCEPT FOR PARA 4.D. REGARDING TRADE AND DEVELOPMENT PROGRAM, AUTHORIZATION IN REFTEL IS FULLY ACCEPTABLE AS IS. IF PARA 4.D. BANS WHAT I UNDERSTAND IT TO MEAN, AS SPELLED OUT BELOW, THEN IT, TOO, IS ACCEPTABLE AND WORKABLE AS IS.

2. WITH RESPECT TO TRADE AND DEVELOPMENT PROGRAM PASSAGE, THE IMPLICATIONS FOR THE PROJECT AND THE PAKISTAN OYB ARE UNCLEAR. WE DESCRIBE BELOW OUR

UNDERSTANDING OF AID/W'S INTENTIONS, GLEANED FROM DISCUSSIONS DURING THE DAYS PRECEDING AND FOLLOWING THE PROJECT REVIEW COMMITTEE MEETING AND ANPAC IN WASHINGTON, AND A NUMBER OF PHONE CALLS BETWEEN THE BUREAU AND THE MISSION. OUR UNDERSTANDINGS ARE AS FOLLOWS:

A. AID/W INTENDS THAT A TOTAL OF DOLS 2 MILLION BE TAKEN FROM THE PAKISTAN PROGRAM FOR TDP, ONE MILLION IN FY 88 AND ONE MILLION FROM FY 89 OBLIGATIONS.

B. THESE SUMS, SIGNED WITH THE GOP IN THE PRIVATE SECTOR POWER PROJECT, WILL BE TRANSFERRED TO TDP TO BE USED DIRECTLY IN SUPPORT OF THE PRIVATE SECTOR POWER PROJECT IN PAKISTAN.

C. THE FUNDS ARE BEING LOANED REPEAT LOANED TO TDP FOR ONLENDING TO AMERICAN BUSINESSES. TDP WILL BE REQUIRED TO REPAY THIS MONEY TO A.I.D., AND THESE FUNDS SHALL BE RETURNED TO THE PRIVATE SECTOR POWER PROJECT IN PAKISTAN.

D. THE REQUIREMENT THAT PROJECT FUNDS BE DIVERTED TO TDP ARISES BECAUSE OF THE RECENT PASSAGE OF THE U.S. TRADE LEGISLATION REQUIRING A.I.D. SUPPORT FOR TDP. PAKISTAN IS INVOLVED BECAUSE OF THE LATENESS IN THE FISCAL YEAR AND THE FACT THAT MOST OF THE AGENCY'S FY 88 MONEY IS ALREADY COMMITTED ELSEWHERE. THE FUNDING REQUIRED OF THE PAKISTAN PROGRAM REPRESENTS BETWEEN 18 AND 20 PERCENT OF THE FIVE TO 10 MILLION DOLLARS THAT WILL GO TO TDP OVER FY 88 AND 89. THIS PROPORTION IS CONSIDERED BY AID/W TO BE REASONABLE AND EQUITABLE BECAUSE OF THE SIZE OF THE PAKISTAN PROGRAM AS COMPARED TO ALL OTHER PROGRAMS.

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E. THE PSP WAS TAPPED BECAUSE IT SEEMS APPROPRIATE FOR TDP ACTIVITIES.

3. WE ARE USING THESE UNDERSTANDINGS NOW IN DISCUSSIONS WITH THE GOP ON WHY THIS DIVERSION OF FUNDS MUST BE INCORPORATED INTO THE PRIVATE SECTOR POWER PROJECT TO BE OBLIGATED IN SEPTEMBER, 1988. WE ARE NOT SANGUINE THAT THE ARGUMENTS WILL BE PERSUASIVE. PAKISTAN HAS ALREADY REJECTED A SIMILAR PROPOSAL--A DOLS 10 MILLION GRANT FUND IN OUR ORIGINAL PROJECT PAPER--ON THE GROUNDS THAT THE U.S. PRIVATE SECTOR DOES NOT NEED SUCH SUBSIDIES BECAUSE IT HAS DEMONSTRATED ITS INTEREST IN THE PROJECT THROUGH PROPOSALS ALREADY SUBMITTED. THE FACT, IF TRUE, THAT THE TDP FUND IS LOAN AND WILL BE REPAID TO THE PROJECT WILL SIGNIFICANTLY HELP SOFTEN THAT OBJECTION. IN ANY EVENT, ONCE FUNDS ARE OBLIGATED IN PROAG, GOP WOULD HAVE TO AGREE TO A TDP USE.

should be in P

4. PAKISTAN IS ALSO LIKELY TO OBJECT TO ITS PROGRAM CARRYING UP TO 20 PERCENT OF THE TOTAL REQUIREMENT FOR THE AGENCY WORLDWIDE. THE PAKISTAN PROGRAM DOES NOT REPRESENT 20 PERCENT OF AID'S WORLDWIDE PROGRAM. THE ARGUMENT THAT THE MONEY MUST BE TAKEN FROM THIS PROJECT THIS YEAR DUE TO THE LATENESS OF PASSAGE OF THE TRADE BILL UNDERCUTS, WE THINK, THE ARGUMENT FOR ANOTHER MILLION DOLLARS BEING TAKEN NEXT YEAR FROM THE SAME PROGRAM AND SAME PROJECT.

5. PLEASE ADVISE IMMEDIATE IF OUR UNDERSTANDINGS IN PARA 2 ABOVE ARE NOT CORRECT. ANY CORRECTIONS IN OUR UNDERSTANDINGS WILL HAVE TO BE SUPPORTED BY FULL EXPLANATION WE CAN USE IN OUR SUBSEQUENT DISCUSSIONS WITH THE GOP.

6. CABLE US IMMEDIATELY PERTINENT PROVISIONS OF THE TRADE BILL. THE GOP WILL ASK TO SEE THE SPECIFIC LANGUAGE. OAKLEY

TDP Grant 50% with full repayment on successful projects to the fund.

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AIDAC FOR/PARTNER AND CLEARANCE

E.O. 12356: N/A
TAGS:
SUBJECT: PRIVATE SECTOR POWER [illegible] DRAFT PROJECT AUTHORIZATION

THIS CABLE CONTAINS THE TEXT OF A REVISED DRAFT AUTHORIZATION PREPARED BY AID/W IN THE ABSENCE OF INPUTS FROM THE MISSION CAUSED BY THE COMMUNICATIONS DIFFICULTIES OF THE PAST DAYS. THE DRAFT IS SENT TO SPEED THINGS UP ON THE UNDERSTANDING THAT THE COUNTRY REFERENCE WAIVER ACTION CANNOT BE COMPLETED UNTIL MISSION INFORMATION IS RECEIVED.

TEXT OF ENTIRE REVISED DRAFT FOLLOWS:

1. PURSUANT TO SECTION 531 OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED, I HEREBY AUTHORIZE THE PRIVATE SECTOR POWER PROJECT FOR PAKISTAN (THE "COOPERATING COUNTRY") INVOLVING PLANNED OBLIGATIONS OF NOT TO EXCEED DOLS 175,000,000 IN GRANT FUNDS OVER A FIVE YEAR PERIOD FROM DATE OF AUTHORIZATION, SUBJECT TO THE AVAILABILITY OF FUNDS IN ACCORDANCE WITH THE A.I.D. OBLIGATION PROCESS, TO HELP IN FINANCING FOREIGN EXCHANGE AND LOCAL CURRENCY COSTS FOR THE PROJECT. THE PLANNED LIFE OF THE PROJECT IS TEN YEARS FROM THE DATE OF INITIAL OBLIGATION.

2. THE PROJECT CONSISTS OF ASSISTANCE TO MOBILIZE PRIVATE SECTOR RESOURCES FOR FINANCING, CONSTRUCTION, OWNING AND OPERATION OF POWER PLANTS FOR PAKISTAN, AND INCLUDES SEPARATE COMPONENTS FOR SUPPORT OF (A) INSTITUTIONAL DEVELOPMENT, (B) AN ENERGY DEVELOPMENT FUND (THE "FUND"), AND (C) SPECIAL STUDIES, ASSISTANCE TO POTENTIAL PRIVATE INVESTORS, AND MISSION MANAGEMENT SUPPORT, EVALUATIONS AND AUDITS.

3. THE PROJECT AGREEMENT(S) WHICH MAY BE NEGOTIATED AND EXECUTED BY THE OFFICER(S) TO WHOM SUCH AUTHORITY IS DELEGATED IN ACCORDANCE WITH A.I.D. REGULATIONS AND DELEGATIONS OF AUTHORITY SHALL BE SUBJECT TO THE FOLLOWING ESSENTIAL TERMS AND COVENANTS AND MAJOR CONDITIONS, TOGETHER WITH SUCH OTHER TERMS AND CONDITIONS AS A.I.D. MAY DEEM APPROPRIATE.

4. A. SOURCE AND ORIGIN OF COMMODITIES, NATIONALITY OF SERVICES

COMMODITIES FINANCED BY A.I.D. UNDER THE PROJECT

STATE 275576 [illegible] AID

SHALL HAVE THEIR SOURCE AND ORIGIN IN THE UNITED STATES AND CODE 935 OR PAKISTAN EXCEPT AS A.I.D. MAY OTHERWISE AGREE IN WRITING. EXCEPT FOR OCEAN SHIPPING, THE SUPPLIERS OF COMMODITIES OR SERVICES SHALL HAVE THE UNITED STATES AND CODE 935 OR PAKISTAN AS THEIR PLACE OF NATIONALITY, EXCEPT AS A.I.D. MAY OTHERWISE AGREE IN WRITING. OCEAN SHIPPING FINANCED BY A.I.D. UNDER THE PROJECT SHALL, EXCEPT AS A.I.D. MAY OTHERWISE AGREE IN WRITING, BE FINANCED ONLY ON FLAG VESSELS OF THE UNITED STATES.

CONDITIONS PRECEDENT

PRIOR TO ANY DISBURSEMENT FOR THE FUND COMPONENT, OR TO THE ISSUANCE OF ANY COMMITMENT UNDER THE PROJECT AGREEMENT OR RELATED TO THE FUND COMPONENT, THE COOPERATING COUNTRY SHALL FURNISH TO A.I.D., IN FORM AND SUBSTANCE SATISFACTORY TO A.I.D.:

(1). EVIDENCE OF ESTABLISHMENT AND STAFFING OF A PRIVATE POWER CELL IN THE MINISTRY OF WATER AND POWER; AND

(2). EVIDENCE OF ESTABLISHMENT AND STAFFING OF THE FUND AND THE EXECUTION OF AN FOME AGREEMENT BETWEEN THE GOVERNMENT OF PAKISTAN AND THE NATIONAL DEVELOPMENT FINANCE CORPORATION.

C. COVENANTS

(1). THE COOPERATING COUNTRY SHALL PERMIT, AND EXERT ITS BEST EFFORTS TO MAKE AVAILABLE, ADEQUATE COMMERCIAL AND DEVELOPMENT FINANCE INSTITUTION RISK CAPITAL IN SUPPORT OF PRIVATE SECTOR PROJECTS TO BE FINANCED THROUGH THE FUND.

(2). THE COOPERATING COUNTRY SHALL REQUIRE ALL BORROWERS FROM THE FUND TO COMPLY WITH ENVIRONMENTAL GUIDELINES AND RESETTLEMENT REQUIREMENTS OF THE WORLD BANK AND A.I.D.

D. TRADE AND DEVELOPMENT PROGRAM

APPROPRIATE TRANSFER OF FUNDS MAY BE MADE TO TDP FOR SUPPORT OF ASSISTANCE TO POTENTIAL INVESTORS.

E. WAIVER

THE FOLLOWING WAIVER TO A.I.D. REGULATIONS HAS BEEN APPROVED:

WAIVER OF HANDBOOK 1, SUPPLEMENT B, SECTION 10 A.6., WITH RESPECT TO BORROWER/GRANTEE CARGO OBLIGATIONS. THE WAIVER WAS MADE PURSUANT TO HANDBOOK 1, SUPPLEMENT B, SECTION 10.D.2. WHEREAS

List of Annexes for PSP Project Paper

A. ANPAC Review of Private Power PID
B. Response to ANPAC and Mission Issues
C. Logical Framework Matrix
D. Project Checklist
E. GOP request for Assistance (in draft)
F. Mission Director's Certifications and AA/ANE Determinations
G. Draft Congressional Notification
H. Draft PP Description for Inclusion in ProAg Agreement
I. W.B. Staff Appraisal Report No. 7226-PAK
J. NDFC Financial Analysis
K. PSP Project Implementation Schedule
L. Contributors to Project Paper
M. Bibliography
N. Intermediate Credit Institution Qualification Statement
O. Outline for Technical Assistance Workscope
P. Power Purchase Agreement Outline
Q. Project Paper Economic Analysis
R A.I.D. Experience with Private Sector Power Programs
S. Analysis of Potential Subprojects
T. Draft Environmental Assessment Guidelines
U. Expressions of Interest in Power Generation
V. Analyses to Support Policy Dialogue
W. Terms and Conditions of AID and Donor Financing
X. Power Generation Capacity and Load Shedding Estimates
Y. AID Administrator's Private Sector Letter
Z. Case Studies of P.S. Projects
AA. Draft Covenants and Conditions Precedent

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ACTION
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E.O. 12356: N/A
TAGS: N/A
SUBJECT: ANPAC REVIEW OF PRIVATE SECTOR POWER PROJECT PID (391-0494)

1. ANPAC MET ON 1 FEBRUARY WITH ANE/PD DIRECTOR VENEZIA CHAIRING TO REVIEW SUBJECT PID. AA/ANE JULIA CHANG BLOCH ATTENDED PART OF THE SESSION. ANPAC APPROVED PID SUBJECT TO GUIDANCE PROVIDED BELOW. THE MISSION IS AUTHORIZED TO PROCEED WITH DETAILED PROJECT DESIGN, WITH PP TO BE REVIEWED IN AID/W IN TIME FOR FY 88 AUTHORIZATION. PP REVIEW IS TO FOLLOW AID/W RIVIEW OF MISSION'S ENERGY SECTOR STRATEGY, WHICH WE UNDERSTAND PER ISLAMABAD 2165 IS NOW SCHEDULED TO ARRIVE IN AID/W WITHIN FOUR TO SIX WEEKS.

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2. FOLLOWING ANPAC, AID/W STAFF AND MISSION REPRESENTATIVE DAVID JOHNSTON HAD OPPORTUNITY TO MEET FOR FULL DAY WITH REPRESENTATIVES OF PRIVATE U.S. FIRMS INTERESTED IN PARTICIPATING IN PROGRAM. BASED ON THAT MEETING, ANPAC AND PRC MEMBERS AND MISSION DIRECTOR-DESIGNATE JIM NORRIS (JUST RETURNED FROM TDY) WERE INVITED TO FOLLOW-UP MEETING TO DEVELOP ADDITIONAL GUIDANCE TO THE MISSION. THAT GUIDANCE IS INCORPORATED INTO THIS MESSAGE.

3. BOTH ANPAC AND PRC (WHICH MET ON 26 JANUARY) WERE MINDFUL OF THE PRECEDENT-SETTING NATURE OF THIS PROJECT AND OF THE NEED FOR FLEXIBILITY IN PROJECT DESIGN TO PERMIT ADJUSTMENTS IN RESPONSE TO IMPLEMENTATION EXPERIENCE AND TO BROAD VARIETY OF SUBPROJECTS IN TERMS OF SIZE, TECHNOLOGY, FUELS, ETC. AT THE SAME TIME, BOTH COMMITTEES FELT STRONGLY THAT CERTAIN MINIMUM CONDITIONS WILL BE NECESSARY FOR PROJECT SUCCESS. MOST SIGNIFICANTLY, CLEAR GOP COMMITMENT TO ESTABLISH INSTITUTIONAL AND PROCEDURAL FRAMEWORK DESCRIBED IN THE PID SHOULD PRECEDE PROJECT AUTHORIZATION. SPECIFIC GOP AGREEMENTS — IN EFFECT CONDITIONS PRECEDENT TO AUTHORIZATION — WHICH MIGHT BE CONTAINED IN EXCHANGE OF LETTERS, SHOULD INCLUDE: (A) ESSENTIAL PRINCIPLES TO BE EMBODIED IN ELECTRICITY PURCHASE AGREEMENTS (UNDERSTANDING THAT EACH AGREEMENT WILL BE NEGOTIATED INDIVIDUALLY AND CONTAIN SOME UNIQUE PROVISIONS); (B)

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ESTABLISHMENT OF SEMI-AUTONOMOUS PRIVATE SECTOR WINDOW AFFILIATED WITH NATIONAL DEVELOPMENT FINANCE CORPORATION (NDFC) TO SERVE AS CHANNEL FOR USAID AND OTHER DONORS' FUNDS (UNLESS ALTERNATIVE MECHANISM IS CHOSEN, AS PER PARA. 6, BELOW); AND (C) ESTABLISHMENT OF INDEPENDENT ELECTRIC POWER COMMISSION TO SERVE AS IMPARTIAL INTERMEDIARY BETWEEN PRIVATE POWER SUPPLIERS AND PURCHASERS (USUALLY WAPDA). DESIGN PROCESS SHOULD DETERMINE EXTENT TO WHICH IMPLEMENTATION OF THESE ACTIONS SHOULD BE CONDITION PRECEDENT TO DISBURSEMENT.

4. ECONOMIC POLICY CLIMATE: SUCCESS OF THE PROJECT IN GENERATING PRIVATE-SECTOR INTEREST AND STIMULATING INVESTMENT IN SUBPROJECTS WILL DEPEND CRITICALLY ON OVERALL ENERGY AND ECONOMIC POLICY CLIMATE IN PAKISTAN. PRC AND ANPAC RECOGNIZED THAT GRADUAL REFORM OF ELECTRICITY TARIFF STRUCTURES AND LEVELS, I.E. MOVEMENT TOWARD PRICING BASED ON LONG-RUN MARGINAL COSTS (AS CALLED FOR IN CDSS), WILL BE NECESSARY TO PERMIT GOP TO PAY ADEQUATE WHOLESALE RATES TO PRIVATE POWER SUPPLIERS WITHOUT INCREASING OVERALL SUBSIDIES BASED ON RETAIL RATES THAT ARE ALREADY TOO LOW AND WILL BE ESPECIALLY INADEQUATE FOR NEW, HIGHER-COST POWER PROJECTS. COMMITTEE WAS PARTICULARLY CONCERNED ABOUT SLOWNESS OF GOP TO CLEAR WAY FOR START-UP OF TARIFF STUDY ON WHOSE RESULTS FUTURE ADJUSTMENTS ARE TO BE BASED. THIS, TOGETHER WITH RECENT HISTORY OF SLOW AND HARD-WON RATE INCREASES OF LAST TWO YEARS, RAISES CONCERNS ABOUT WHETHER THE RELATIVELY LARGE FUTURE TARIFF INCREASES WHICH ARE CONSIDERED NECESSARY WILL IN FACT BE FORTHCOMING. (AT THE SAME TIME, HOWEVER, ANPAC NOTED

THAT GOP IS IN CONFORMANCE WITH TARIFF AGREEMENT SPELLED OUT IN WORLD BANK'S FIRST ENERGY SECTOR LOAN.) WHILE IT WOULD HAVE BEEN DESIRABLE TO HAVE A SPECIFIC GOP PLAN FOR TARIFF INCREASES IN PLACE BEFORE PROJECT AUTHORIZATION, THIS APPEARS TO BE INFEASIBLE GIVEN TIMING OF THE STUDY.

5. ANPAC CONSIDERED THAT THE MOST EFFECTIVE LEVERAGE FOR TARIFF REFORM WILL COME FROM OVERALL MULTI-DONOR ENERGY ASSISTANCE PROGRAM, LED BY THE WORLD BANK IN ITS UPCOMING NEGOTIATIONS FOR THE ENERGY SECTOR II LOAN, RATHER THAN FROM WITHIN THIS PROJECT. CONSEQUENTLY, ANPAC DOES NOT ANTICIPATE NEED FOR PROJECT-SPECIFIC CONDITION PRECEDENT ON PRICING. ANY CONDITIONALITY CONTAINED IN THIS PROJECT SHOULD BE SPECIFIC TO ISSUES WITHIN THE PROJECT ITSELF. HOWEVER, PP SHOULD DISCUSS MEANS BEYOND PROJECT BY WHICH MISSION WILL ADDRESS PRICING AND OTHER POLICY ISSUES AND ACCOMMODATE THE CDSS GOAL OF LRMC PRICING, INCLUDING MECHANISM FOR DONOR COORDINATION TO ENSURE CONSISTENCY AND MUTUAL
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REINFORCEMENT OF DONORS' MESSAGES TO GOP ON ELECTRICITY PRICING. THIS TWO-TIERED APPROACH SHOULD PROVIDE THE MISSION WITH THE GREATEST LATITUDE TO PURSUE THIS PROGRAM (AND INDEED, TO TERMINATE EFFORTS IN THE FACE OF NON-PERFORMANCE) WITHOUT AFFECTING OUR LONG-TERM ENERGY SECTOR DIALOGUE.

6. MANAGEMENT OVERSIGHT: LACK OF PRIOR AID EXPERIENCE WITH PROJECTS OF THIS TYPE ALSO LED ANPAC TO CONCLUDE THAT AN UNUSUAL DEGREE OF MANAGEMENT ATTENTION WILL BE NECESSARY IN THE EARLY YEARS OF THE PROJECT. CONSEQUENTLY, ANPAC REQUESTS THAT PP INCLUDE PLAN FOR THOROUGH MANAGEMENT REASSESSMENT APPROXIMATELY TWO YEARS AFTER START-UP OF MAJOR FIELD ACTIVITIES (E.G. ARRIVAL IN COUNTRY OF TA CONTRACTOR'S CHIEF-OF-PARTY). THE REASSESSMENT WOULD FORM THE BASIS FOR A DECISION ON WHETHER TO PROCEED FURTHER WITH IMPLEMENTATION, AND THUS SHOULD NOT BE COMPROMISED BY PRIOR FUNDING COMMITMENTS EXTENDING MORE THAN SIX MONTHS BEYOND THE TIME OF THE REASSESSMENT, I.E., THERE SHOULD BE NO HESITATION TO INCLUDE TERMINATION AS A POSSIBLE OPTION IN THE EVENT OF LITTLE OR NO PROGRESS IN ESTABLISHING THE BASIS FOR A PRIVATE POWER GENERATION SECTOR. (THIS COULD BE ACCOMPLISHED BY INCREMENTAL FUNDING OF PRIVATE-SECTOR WINDOW CAPITALIZATION AND PHASED OR SEGMENTED TA CONTRACT OR CONTRACTS, WITH CLEAR NOTICE TO CONTRACTORS AT TIME OF CONTRACT SIGNING THAT LATER PHASES WOULD DEPEND ON OUTCOME OF ASSESSMENT.) REASSESSMENT SHOULD INCLUDE REVIEW OF ASSUMPTIONS UNDERLYING DESIGN OF PROJECT TO ENSURE THEY REMAIN VALID, AND AN UPDATED APPRAISAL OF THE POLICY ENVIRONMENT, AS WELL AS OF EXPERIENCE WITHIN THE PROJECT. AS NOTED IN PARA. 5 ABOVE, ANPAC CONCLUDED THAT ONGOING ENERGY SECTOR PROGRAMS APART FROM THIS PROJECT ARE MOST APPROPRIATE VEHICLE FOR POLICY DIALOGUE. IN THIS REGARD, THIS PROJECT SHOULD NOT CONTINUE SIMPLY TO PROVIDE TA IN THE ABSENCE OF PROGRESS IN STIMULATING PRIVATE INVESTMENT. AID/W REQUESTS AN OPPORTUNITY TO SHARE MISSION'S FINDINGS AND TO BE ADVISED AT COMPLETION OF ASSESSMENT OF MISSION'S DECISION REGARDING FUTURE OF PROJECT.

7. PRIVATE SECTOR WINDOW: AS SUGGESTED IN PARA. 2, ABOVE, ANPAC VIEWS THE CREATION OF A SEMI-AUTONOMOUS PRIVATE SECTOR WINDOW (PSW) AS A CRITICAL MINIMUM REQUIREMENT FOR ACCEPTABILITY OF NATIONAL DEVELOPMENT FINANCE CORPORATION (NDFC) AS PRINCIPAL COUNTERPART AGENCY FOR SUBPROJECT FINANCE. USE OF PRIVATE FINANCIAL INTERMEDIARY WOULD BE PREFERABLE, BUT IF INFEASIBLE AT THIS TIME IT REMAINS HIGHLY DESIRABLE TO ENCOURAGE GOP TO OPERATE PSW ALONG PRIVATE-SECTOR LINES TO MAXIMUM EXTENT FEASIBLE AND TO MOVE TOWARD ITS EVENTUAL FULL PRIVATIZATION, PROBABLY AS A FINANCE FACILITY FOR BROAD RANGE OF ENERGY ACTIVITIES. AID/W SUGGESTS THAT TECHNICAL ASSISTANCE AND INSTITUTION-BUILDING COMPONENTS OF PROJECT BE DESIGNED TO PROMOTE THAT OBJECTIVE, AND THAT POLICY DIALOGUE WITH GOP EMPHASIZE ITS IMPORTANCE FROM THE OUTSET.

F. ALTERNATIVE FINANCING MECHANISMS: AT THE SAME TIME, AID/W SUGGESTS THAT MISSION CAREFULLY CONSIDER ALTERNATIVES TO NDFC/PSW OR AT LEAST SUPPLEMENTARY MECHANISMS FOR FLEXIBILITY IN SUBPROJECT FINANCING USING AID FUNDS. UNDERSTANDING THAT MISSION HAS ALREADY EXPLORED A NUMBER OF POSSIBILITIES AND THAT WORLD BANK IS EVIDENTLY COMMITTED TO PSW APPROACH AT THIS POINT, AID/W STILL BELIEVES THAT PP SHOULD EXAMINE ALTERNATIVES. PRC DISCUSSED ALTERNATIVES SUCH AS ISSUANCE OF RUPEE AND/OR DOLLAR-DENOMINATED DEBENTURES BY SUBPROJECT SPONSORS GUARANTEED BY AID, PURCHASE OF SUBORDINATED DEBENTURES BY AID FOR ULTIMATE RE-SALE INTO DOMESTIC/INTERNATIONAL CAPITAL MARKETS, AID GUARANTEE OF INTERNATIONAL MERCHANT BANK UNDERWRITING OF DEBT/EQUITY INSTRUMENTS AND OTHER FORMS OF CAPITAL/FINANCIAL MARKET INTERMEDIATION WHICH COULD DEAL WITH INVESTORS' UNDERSTANDABLE RISK CONCERNS AND FACILITATE DEVELOPMENT OF SUSTAINABLE FINANCING ARRANGEMENTS TO SUPPORT PAKISTAN ENERGY SECTOR DEVELOPMENT. FOR EXAMPLE, WOULD A PROGRAM PARALLELING THE HG MECHANISM MAKE SENSE IN

SOME INSTANCES? DISCUSSIONS WITH U.S. PRIVATE FIRMS INDICATE THAT THE CONCEPTS OF U.S. GUARANTEE OR COMMERCIAL RISK INSURANCE (PERHAPS UNDER SPECIAL FACILITY) FOR COMMERCIAL LOANS MERIT EXAMINATION. PRE/I HAS EXPERIENCE WITH SOME OF THESE OPTIONS AND WILL BE PLEASED TO WORK WITH MISSION, IN CONSULTATION WITH GC, ON ANALYSIS IF MISSION SO WISHES. OF COURSE, PRE REVOLVING FUND AUTHORITIES MAY DIFFER IN THIS RESPECT, AND WE ARE NOT AWARE OF ANY REGIONAL BUREAU USE OF DA OR ESF FOR THESE ALTERNATIVES. THE ISSUES OF LEGALITY AND OPERATIONAL FEASIBILITY OF SUCH ALTERNATIVES WOULD HAVE TO BE LOOKED AT IN PROJECT DESIGN.

PRIVATE-SECTOR REPRESENTATIVES ALSO SUGGESTED THAT AID FUNDS BE USED TO FINANCE A PORTION OF PROJECT PREPARATION COSTS, PERHAPS ON A REIMBURSABLE BASIS FOR BT

PROJECTS THAT ARE ULTIMATELY APPROVED FOR FINANCING. THIS COULD INCLUDE NOT ONLY FEASIBILITY STUDIES BUT ALSO COSTS ASSOCIATED WITH NEGOTIATING PURCHASE AGREEMENTS, OBTAINING REGULATORY APPROVALS, ETC. SUCH COSTS REPORTEDLY CAN REACH LEVELS APPROACHING ONE MILLION DOLLARS ON MEDIUM-SIZE POWER PROJECTS WITH PROTRACTED PREPARATION/APPROVAL PROCESSES IN LDCS, A LEVEL TOO HIGH FOR MEDIUM AND SMALL FIRMS TO ABSORB, ESPECIALLY WHEN LIKELIHOOD OF APPROVAL IS UNCERTAIN. THIS IDEA OBVIOUSLY HAS BOTH POSITIVE AND NEGATIVE ASPECTS, BUT AID/W SUGGESTS IT BE CONSIDERED DURING DESIGN.

9. INSTITUTIONAL ISSUES: PRC AND ANPAC WERE ALSO CONCERNED ABOUT THE MAGNITUDE AND COMPLEXITY OF THE INSTITUTION-BUILDING TASK REQUIRED TO MAKE PRIVATE POWER A REALITY IN PAKISTAN, AS PRESENTED IN THE PID. THE NEED TO ESTABLISH AND STAFF TWO NEW ENTITIES -- THE NDFC/PSW AND AN ELECTRIC POWER COMMISSION TYPE ENTITY -- AND TO AUGMENT THE CAPACITIES OF WAPDA AND THE MINISTRY OF WATER AND POWER, COULD RESULT IN SERIOUS DELAY TO START-UP OF PRIVATE SUBPROJECTS. IN ADDITION, POTENTIAL PRIVATE INVESTORS COULD BE DISCOURAGED BY A LENGTHY, MULTI-AGENCY PROJECT PREPARATION AND APPROVAL PROCESS. THE DESIGN TEAM SHOULD EXPLORE THE POSSIBILITY OF STREAMLINING SUBPROJECT APPROVAL PROCESSES BY CONSOLIDATING AGENCY CLEARANCES (AS MISSION REP INDICATED WAS ALREADY ENVISIONED) AND SHOULD CAREFULLY ASSESS PRIORITIES FOR TECHNICAL ASSISTANCE TO KEY AGENCIES SO AS TO MAKE THEM EFFECTIVELY OPERATIONAL AS SOON AS POSSIBLE. THE SEQUENCING OF TA AND INITIATION OF SUBPROJECTS SHOULD BE DONE CAREFULLY TO ENSURE THAT INSTITUTIONAL IMPEDIMENTS DO NOT HOLD UP SUBPROJECTS THAT ARE OTHERWISE READY FOR APPROVAL.

10. POWER PURCHASE AGREEMENT: DISCUSSIONS WITH PRIVATE SECTOR RE-EMPHASIZED THE IMPORTANCE OF THE POWER PURCHASE AGREEMENT TO FIRMS' WILLINGNESS TO DO BUSINESS WITH WAPDA. AT A MINIMUM, IT WOULD APPEAR THAT SUCH AGREEMENTS NEED TO INCLUDE: (A) TAKE-OR-PAY ARRANGEMENT FOR A SUBSTANTIAL PORTION OF GENERATING CAPACITY (E.G., 60 PERCENT); (B) AN ADEQUATE PURCHASE PRICE TO COVER LONG-RUN COSTS AND AN ACCEPTABLE ADJUSTMENT FORMULA; (C) PROVISION FOR EFFECTIVE AND TIMELY RECOURSE IN THE EVENT THAT WAPDA DOES NOT PAY PROMPTLY; (D) GUARANTEED ACCESS TO FUELS CONTROLLED BY GOP IF THESE ARE AGREED SOURCE FOR PLANT; (E) A FUEL PRICE ESCALATION CLAUSE; AND (F) PROVISION FOR ARBITRATION OF ANY DISPUTES ARISING OUT OF THE CONTRACT.

11. ANPAC ALSO HAS THE FOLLOWING GUIDANCE FOR MISSION REGARDING CONCERNS:

A. TERMS OF FINANCING: THE DETAILS OF SUBPROJECT DEBT AND EQUITY FINANCING FOR INDIVIDUAL SUBPROJECTS OBVIOUSLY CANNOT BE WORKED OUT DEFINITIVELY AT THIS TIME; RATHER, THE PROJECT NEEDS TO INCORPORATE FLEXIBILITY TO ADAPT TO SPECIFIC SUBPROJECT NEEDS. BEARING IN MIND THE FUNDAMENTAL NEED TO ATTRACT PRIVATE

INVESTMENT, A BROAD RANGE OF FINANCING OPTIONS SHOULD BE EXPLORED TO MAXIMIZE ATTRACTIVENESS OF SUCH VENTURES WHILE REMAINING CONSISTENT WITH BROADER ECONOMIC AND RISK CONSIDERATIONS. TERMS OF DEBT FINANCE AND INSTRUMENTS OF EQUITY INVESTMENT MUST BE STRUCTURED TO TAKE ACCOUNT OF POLITICAL AND FINANCIAL RISK AS WELL AS ECONOMIC EFFICIENCY CRITERIA AND PRIVATE PARTIES' REQUIREMENTS FOR A RETURN ON INVESTMENT SUFFICIENT TO ENCOURAGE ENTRY IN THIS INHERENTLY HIGH-RISK ENVIRONMENT (RELATIVE TO INVESTMENT OPPORTUNITIES IN THE U.S). THE PROJECT MAY ALSO PRESENT OPPORTUNITIES FOR FURTHER DEVELOPMENT OF PAKISTANI CAPITAL MARKETS. AT PRESENT, AID/W UNDERSTANDS THAT NO GOP SOVEREIGN GUARANTEE IS EXPECTED TO BE SOUGHT FOR LOANS UNDER THE PSP PROJECT; WITHOUT SUCH A GUARANTEE, HOWEVER, IT IS UNCERTAIN WHETHER THE U.S. EXPORT-IMPORT BANK OR KEY COMMERCIAL BANKS WILL HAVE SUFFICIENT CONFIDENCE TO BE INVOLVED. (FYI, BANKING REPRESENTATIVES IN PRIVATE-SECTOR MEETING INDICATED RELUCTANCE TO LEND WITHOUT SOVEREIGN GUARANTEE AND SOUGHT MINIMAL UNCOVERED DEBT. ON THE OTHER HAND, ONE PRIVATE SECTOR ATTENDEE STATED THAT THE COMBINED INVOLVEMENT OF WORLD BANK, AID, ADB AND OTHER DONORS WAS VIEWED AS A SUBSTANTIAL POLITICAL GUARANTEE.) THE DESIGN TEAM SHOULD THOROUGHLY EXPLORE THIS AREA OF

CONCERN. AID GRANT FUNDS SHOULD BE LENT TO THE NDFC AND TO FINAL BORROWERS WITH APPROPRIATE SPREADS, BUT IT MAY BE INAPPROPRIATE FOR THE PP TO SPECIFY A FIXED INTEREST RATE (E.G. 14 PERCENT AS STATED IN THE PID).

B. PRIVATE-SECTOR ACCESS TO NATURAL GAS FIELDS: AS MISSION IS AWARE, LOW-QUALITY GAS FIELDS POTENTIALLY OFFER A SIGNIFICANT OPPORTUNITY FOR PRIVATE-SECTOR POWER DEVELOPMENT. GOP POLICY NOW REPORTEDLY ALLOWS PRIVATE-SECTOR POWER GENERATION BASED ON NATURAL GAS (AS WELL AS OIL, INDIGENOUS COAL AND HYDROPOWER), BUT IS LESS CLEAR WITH RESPECT TO PERMITTING PRIVATE DEVELOPMENT OF THE NON-ASSOCIATED GAS FIELDS. IF THE BT

GOP OIL AND GAS DEVELOPMENT CORPORATION (OGDC) MAINTAINS CONTROL OVER THESE FIELDS, THE PRIVATE SECTOR MAY BE BLOCKED FROM GETTING CONCESSIONS IN PROSPECTIVE FIELDS AND MAY VIEW THE OGDC GAS SUPPLIES AS TOO UNCERTAIN TO UNDERTAKE POWER GENERATION DEPENDENT ON THEM. THE MISSION SHOULD ADDRESS THIS ISSUE DURING PROJECT DESIGN AND IN DIALOGUE WITH THE GOP. THE PROJECT SHOULD LEAVE OPEN THE POSSIBILITY OF USING PSW FINANCING OR OTHER FINANCIAL ALTERNATIVES FOR PRIVATE DEVELOPMENT OF GAS FIELDS ASSOCIATED WITH PRIVATE POWER PLANTS.

C. ENVIRONMENTAL IMPACTS: LIKE ALL POWER PLANTS, PRIVATE SUBPROJECTS COULD HAVE SIGNIFICANT ENVIRONMENTAL IMPACTS. THE PID INDICATES THAT ENVIRONMENTAL GUIDELINES, INCLUDING IMPACT ASSESSMENT REQUIREMENTS, WILL BE DEVELOPED DURING PROJECT DESIGN. IT IS NECESSARY, HOWEVER, TO ENSURE THAT ADEQUATE REGULATIONS AND/OR MITIGATION REQUIREMENTS WILL BE IN PLACE FOR ALL SUBPROJECTS UNDER THE PSP PROJECT AND OTHER COMPONENTS OF PAKISTAN'S PRIVATE POWER PROGRAM. THE DESIGN TEAM SHOULD REVIEW CURRENT GOP DRAFT STANDARDS FOR AIR AND WATER POLLUTION FROM POWER PLANTS AND SHOULD DEVELOP ENVIRONMENTAL CRITERIA AND REQUIREMENTS FOR ALL PROJECTS FINANCED THROUGH THE NDFC PRIVATE SECTOR WINDOW.

D. DONOR COORDINATION: WHILE THE ARRAY OF DONORS EXPECTED TO BE INVOLVED IS IMPRESSIVE, THE PID INDICATES THAT USAID IS SOMEWHAT AHEAD OF THE OTHERS IN PROJECT DEVELOPMENT. ACCORDING TO THE PID, OTHER DONORS' PARTICIPATION WILL BE LIMITED TO CAPITALIZATION OF THE PSW, WHILE WE PROPOSE TO UNDERTAKE ALL REQUIRED TECHNICAL ASSISTANCE AND INSTITUTIONAL DEVELOPMENT. FURTHERMORE, WE APPEAR TO DIFFER IN OUR PRIMARY INTEREST IN SMALL-SCALE SUBPROJECTS. THE MISSION INDICATES THAT THE USAID PROJECT IS CAPABLE OF STANDING ALONE REGARDLESS OF WHAT THE OTHER DONORS DO. HOWEVER, GIVEN THE IMPORTANT POLICY CONSIDERATIONS INVOLVED, AND THE MULTIPLICITY OF INTERESTS REPRESENTED BY THE DONOR GROUP, CLOSE COORDINATION AND CONSISTENT POLICY SIGNALS TO THE GOP WILL BE IMPORTANT. IN ADDITION, THERE MAY BE INSTANCES IN WHICH USAID WILL FIND IT APPROPRIATE TO OPERATE UNDER DIFFERENT PROCEDURES FROM THE BANK (E.G. RE COMPETITIVE PROCUREMENT, AS PER SUBPARA. G, BELOW). THE MISSION SHOULD CONSIDER THE APPROPRIATENESS OF CROSS-CONDITIONALITY BETWEEN USAID AND WORLD BANK (AND OTHER) PROJECTS. WE SUGGEST THE MISSION FORMALLY REQUEST THE BANK TO CALL A MEETING OF ALL INTERESTED DONORS IN THE NEAR FUTURE TO DISCUSS THEIR ROLES AND POLICIES WITH RESPECT TO THE OVERALL PSP PROGRAM. THE MISSION SHOULD CAREFULLY CONSIDER ITS RESPONSE TO THE (UNLIKELY) EVENT THAT THE WORLD BANK DOES NOT GO FORWARD WITH ITS PART OF THE PROGRAM.

E. SCOPE OF PROJECT ACTIVITIES: THE PID DOES NOT CLEARLY DEMARCATE THE BOUNDARIES OF PROJECT ACTIVITIES; IN PARTICULAR, IT DOES NOT INDICATE WHETHER PROJECT FUNDS WILL SUPPORT INFRASTRUCTURE DEVELOPMENT (E.G.,

ACCESS ROADS), FEASIBILITY STUDIES AND OTHER PROJECT PREPARATION COSTS, RESOURCE DEVELOPMENT OR ELECTRICITY DISTRIBUTION. AS SUGGESTED IN PARA. 7 ABOVE, U.S. INTERESTS IN EXPANDING TRADE AND INVESTMENT OPPORTUNITIES ABROAD FOR AMERICAN BUSINESSES MAY JUSTIFY USE OF OUR RESOURCES FOR UP-FRONT COSTS, PARTICULARLY WHEN OTHER DONORS BEAR SUCH COSTS FOR PROMOTION OF THEIR OWN BUSINESSES. IT IS AID/W'S VIEW THAT THE PP SHOULD PERMIT A SIGNIFICANT AMOUNT OF FLEXIBILITY REGARDING PROJECT SCOPE. NONE OF THE ABOVE ACTIVITIES SHOULD BE EXCLUDED; DECISIONS SHOULD BE MADE ON A CASE-BY-CASE BASIS ACCORDING TO CLEAR CRITERIA TO BE DEVELOPED DURING PROJECT DESIGN.

F. USE OF PSW RUPEE REFLOWS: WHILE THE PID DOES NOT SPECIFY WHETHER OR HOW LOCAL-CURRENCY REPAYMENTS TO THE PRIVATE SECTOR WINDOW OF NDFC WILL BE RECYCLED, THERE IS A PRESUMPTION THAT THE MISSION WILL ASK THE GOP TO EARMARK THOSE FUNDS FOR ADDITIONAL PRIVATE-SECTOR ENERGY ACTIVITIES. IN PLACING CONDITIONS ON USE OF REFLOWS MISSION SHOULD FULLY CONSIDER EXTENT TO WHICH IT WILL BE REQUIRED TO MONITOR THE USE OF THE REFLOWS AND STAFF TIME TO DO SO. THE DESIGN TEAM SHOULD ADDRESS THIS CONCERN AND REACH A CONCLUSION REGARDING APPROPRIATE REFLOW PROGRAMMING AND MONITORING, IF ANY. A NEGATIVE DECISION ON EARMARKING FOR PRIVATE SECTOR ENERGY SHOULD BE JUSTIFIED FULLY.

G. COMPETITION FOR PROCUREMENT OF GOODS AND SERVICES: WHILE USAID FUNDING WILL BE TIED TO U.S. SOURCE AND ORIGIN, IT IS UNCLEAR HOW COMPETITION FOR SUPPLY OF CAPITAL EQUIPMENT, A AND E AND CONSTRUCTION SERVICES WILL BE UNDERTAKEN IN CASES WHERE THE SUPPLIERS OF SUCH GOODS AND SERVICES ARE THEMSELVES EQUITY INVESTORS, CREDITORS AND/OR JOINT-VENTURE PARTNERS PROPOSING TO UNDERTAKE SUBPROJECTS. DISCUSSIONS WITH PRIVATE FIRMS SUGGEST THAT THIS WILL BE THE CASE MOST FREQUENTLY, AND THAT PRIVATE ENTITIES WILL PREFER TO PUT TOGETHER THEIR ET

OWN PROPOSALS RATHER THAN TO RESPOND AS INVISIONED BY WORLD BANK TO INTERNATIONAL TENDERS, WITH ACCESS TO USAID FUNDS IN NDFC/PSW TRIGGERED BY SUCCESSFUL BID BY U.S. SUPPLIER. FIRMS WITH WHOM AID/W DISCUSSED PROJECT MAINTAINED THIS VIEW DESPITE FACT THAT RECENT EXCHANGE-RATE ADJUSTMENTS APPEAR TO PLACE U.S. FIRMS IN A MORE COMPETITIVE POSITION THAN HAS BEEN THE CASE IN RECENT YEARS. THE PP SHOULD ANALYZE THE PRACTICAL OPTIONS WHICH MAY BE AVAILABLE TO ASSURE ECONOMY AND QUALITY IN SUCH CIRCUMSTANCES. THERE ARE PRECEDENTS FOR NEGOTIATED PROCUREMENT IN SIMILAR CASES WHERE WAIVERS WERE APPROVED ON A CASE-BY-CASE BASIS. AID/W WILL PROVIDE ADDITIONAL GUIDANCE TO THE MISSION ON THIS MATTER AFTER CONSULTATIONS WITH SER/OP AND GC. DESIGN TEAM SHOULD EXPLORE MEANS OF ENSURING GOOD BUSINESS PRACTICES IN UNSOLICITED PROPOSALS WHILE NOT PENALIZING ENTREPRENEURIAL INITIATIVE OR U.S. EFFORTS TO GAIN MARKET SHARE.

H. WAPDA'S ROLE IN SUBPROJECT PLANNING AND INITIATION: THE PID INDICATES THAT WAPDA WILL DEVELOP A LIST OF PROJECTS ACCEPTABLE FOR DEVELOPMENT BY THE PRIVATE SECTOR, BUT WILL ALSO CONSIDER PROPOSALS FOR PROJECTS NOT ON ITS LIST. SOME PRIVATE PARTIES HAVE EXPRESSED A NEED FOR SUCH A LIST TO ENSURE THAT THEY DO NOT PURSUE IDEAS THAT HAVE NO CHANCE FOR GOP ACCEPTANCE, BUT OTHERS SEEM TO SEE IT AS TOO PRESCRIPTIVE AND LIMITING. AID/W SUGGESTS THAT THE LIST SHOULD SERVE ONLY INFORMATIONAL (AS OPPOSED TO PRESCRIPTIVE) PURPOSES, SO AS NOT TO DISCOURAGE CONSIDERATION OF A FULL RANGE OF IDEAS INITIATED BY THE PRIVATE SECTOR. FURTHER, PREPARATION OF WAPDA LIST SHOULD NOT BE A PREREQUISITE TO CONSIDERATION OF SUBPROJECTS. IF IT EXISTS, IT SHOULD BE UPDATED PERIODICALLY TO REFLECT ADDITIONAL OPPORTUNITIES FOR PRIVATE-SECTOR POWER INVESTMENTS. ALSO, THE PID GIVES THE IMPRESSION THAT WAPDA WILL BE IN A CENTRAL ROLE IN APPROVING PROJECTS. WHILE THEY SHOULD HAVE AN INPUT, ANPAC FELT THAT MINISTRY OF PLANNING AND MINISTRY OF FINANCE WERE IN BETTER POSITION TO CONSIDER

NATIONAL ENERGY AND ECONOMIC COSTS AND BENEFITS. PP SHOULD CAREFULLY CONSIDER THIS ISSUE.

I. DIRECT SALE OF POWER TO INDUSTRIAL USERS: SOME OF THE MAJOR COSTS INCURRED BECAUSE OF LOAD-SHEDDING ARE ABSORBED BY THE INDUSTRIAL SECTOR. WHILE THE PID FOCUSES ON PRIVSTE POWER PLANTS SELLING TO WAPDA GRID, THE PP TEAM SHOULD ALSO EXAMINE THE POSSIBILITY OF DIRECT SALES TO INDUSTRIAL ESTATES OR PLANTS.

12. AID/W WISHES TO COMMEND DAVID JOHNSTON FOR HIS EXCELLENT JOB IN REPRESENTING THE MISSION, DEALING WITH AID/W ISSUES AT THE PRC AND ANPAC, AND HANDLING THE INTERACTION WITH PRIVATE SECTOR FIRMS AT THE DAY-LONG REVIEW. SHULTZ

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ANNEX B

PRIVATE SECTOR POWER PROJECT
ISSUES AND CONCERNS

I. USAID/WASHINGTON - ANPAC/PRC CONCERNS

A. GOP Agreement Preceding Authorization

The Project Review Committee felt strongly that certain minimum conditions will be necessary for project success prior to Project authorization. These included (1) essential principles to be embodied in electricity purchase agreements, (2) establishment of a semi-autonomous window affiliated with the National Development Finance Corporation (NDFC) to serve as channel for USAID and other donor funds, and (3) establishment of an independent electric power commission to serve as an impartial intermediary between private power suppliers and purchasers. The design process should determine the extent to which implementation of these actions should be conditions precedent to disbursement.

The project design has taken into account the above issues. We believe that the proposed program and institutional arrangements provide the needed checks and balances to ensure a transparent and fair process. Conditions Precedent have been included which require (1) agreement to the principles to be embodied in power purchase agreements (PPAs), (2) establishing a semi-autonomous Fund under the auspices of the NDFC with donor oversight (led by the WB) which must approve all loans being disbursed, and (3) establishing a Private Power Cell (PPC) within the Ministry of Water and Power (MWP). The PPC will manage and adjudicate relations between private power suppliers and public sector purchasers with essentially the responsibilities of an electric power commission --- acting, however, within the framework of, and under the authority of, the Ministry of WP as is most appropriate in the Pakistan governmental context.

B. Tariff Pricing Reform Based on Long Run Marginal Cost (LRMC)

The ANPAC cable suggested that the PP should discuss the means beyond the Project by which the Mission will address pricing and other policy issues and accommodate the CDSS goal of LRMC pricing including mechanisms for donor coordination to ensure consistency and mutual reinforcement of donors messages to the GOP on electricity prices.

The Project will provide substantial reinforcement to the position of the Mission and other donors relative to tariff reform since new private power supplies are necessarily priced at realistic rates which will fully cover the costs of generation plus a reasonable return on investment. Payment of these rates, through the PPA mechanism, will force WAPDA to obtain compensating revenues through its electricity pricing, thus exerting a strong leverage toward the tariff reform already mandated by the CDSS goals and the efforts of other donors.

C. Management Oversight

The ANPAC cable requested that the PP include a plan for management reassessment approximately two years after start-up of the major field activities (e.g. arrival in country of a TA contractor's Chief of Party).

As outlined in the Evaluation Plan, the Mission will undertake an in-depth project review approximately two years after beginning implementation activities. This review is an important part of the Project's Evaluation Plan. The Mission expects that this review could have an important impact on AID's overall private sector strategy for the energy sector.

D. Status of the Fund

AID/Washington suggested that the technical assistance and institution building components of the project be designed to (1) encourage the GOP to operate the Fund along private sector lines to the maximum extent feasible, (2) move towards eventual full privatization, probably as a finance facility for a broad range of energy activities, and (3) that the policy dialogue with the GOP emphasize its importance from the outset.

The Fund operation as defined in the project design provides for WB oversight of its operation. The Fund will conduct studies (under World Bank Sponsorship) to move steadily towards a private sector operational concept. Initially, the Fund will operate autonomously under its loan review process, on commercial principles and with a structure which would allow for its future conversion to a private investment bank, an objective which is expressly stated in the project design.

E. Alternative Financing Mechanisms

AID/Washington suggested that the Mission carefully consider alternatives to the NDFC or at least supplementary mechanisms for flexibility in subproject financing using AID funds. The PP should examine alternatives such as (1) issuance of rupee and/or dollar denominated debentures by sub-project sponsors, guaranteed by AID, (2) purchase of subordinated debentures by AID for ultimate resale into domestic international capital markets, (3) AID guarantee of international merchant bank underwriting of debt equity instruments, and (4) US guarantee or commercial risk insurance for commercial loans.

The project design team has considered the above alternatives as part of its assessment of subproject financing issues. Implementing any of the above unusual financial instruments or mechanisms would be a very complicated, time consuming activity in some cases requiring Congressional changes to AID's operating charter and the establishment of substantial reserve funds against potential losses on a small number of larger subprojects. To prevent delay of project implementation it was decided to proceed along the more conventional lines of the Fund and to

provide the potential to evaluate these other funding mechanisms via the Special Studies Component of the program, depending on experience with the program during the first two years.

F. Proposal Preparation Costs

AID/Washington suggested that the design effort consider the use of AID funds to finance a portion of proposal preparation cost perhaps on a reimbursable basis for subprojects that are ultimately approved for financing. Preparation costs could include costs for feasibility studies, negotiating purchase agreements, obtaining regulatory approvals, etc.

This provision has been specifically included in the Project under Component 3, i.e. Prefeasibility and Feasibility Study Support. The proposed approach is described in Section III of the Project Paper.

G. Institution Building and Institution Streamlining

The ANPAC cable suggested the design team should explore the possibility of streamlining the subproject approval processes by consolidating agency clearances and should carefully assess priorities for technical assistance to key agencies so as to make them effectively operational as soon as possible.

The project design emphasizes the need to avoid creating new institutions with associated inevitable delays and has focussed its technical assistance on three key organizations, the Private Power Cell (PPC), WAPDA Private Power Cell (WPPC) and the Energy Wing at the Planning Commission. This technical assistance is structured to specifically streamline procedures and to keep them as transparent as possible. All initial contact between private investors and the GOP is through the PPC, with subsequent interaction with the WPPC and the Fund occuring under well-defined terms in a transparent process widely publicized to all potential investors.

H. Power Purchase Agreement (PPA)

The ANPAC emphasized the importance of the PPA to firms' willingness to do business with WAPDA. The ANPAC suggested at a minimum that the PPA include (1) take or pay arrangement for a substantial portion of generating capacity (e.g. 60-percent), (2) an adequate purchase price to cover long run costs with an acceptable adjustment formula, (3) provision for effective and timely recourse in the event that WAPDA does not pay promptly, (4) guaranteed access to fuels controlled by GOP, (5) a fuel price escalation clause, and (6) provision for arbitration of any disputes arising out of the contract.

The PPA principles prepared in support of the Project include specific reference to all the issues raised above as well as many others

(currency convertibility, etc.) associated with the likely international financing of subprojects. An outline of the expected PPA is contained in Annex P.

I. Terms of Financing

The ANPAC committee suggested that the Project needs to incorporate flexibility in the details of debt and equity financing for individual subprojects. A broad range of financing options should be explored to maximize attractiveness of such ventures while taking into account political and financial risks as well as economic efficiency criteria and private parties' requirements for return on investment sufficient to encourage entry in this inherently high risk environment.

The Project Paper indicates that the terms of the Fund lending will be periodically reviewed to determine if changes in debt/equity ratios, rates, duration, grace periods and other terms should be modified. The sources of debt and equity financing and other debt financing are up to the individual subproject proposer and will differ in each case. However, the requirement for a substantial amount of equity (25-percent) is an important feature which ensures the commitment of project sponsors and provides additional private sector financial resources, both domestic and foreign, for the power sector. Major changes in equity requirements should, therefore, be made only after careful analyses of the consequences.

J. Opportunities for Pakistani Capital Market Development

The ANPAC cable directed the design team to thoroughly explore opportunities for further development of Pakistani capital markets within the context of the project. In the absence of a GOP sovereign guarantee, will the combined involvement of the WB, AID, ADB and other donors be viewed by the US Export/Import bank and other key commercial banks as sufficient political guarantee?

The Project will directly help capital markets by virtue of the fact that almost all projects will raise a portion of their debt equity on the Karachi stock exchange. Also, the GOP has indicated an interest in allowing private subprojects to float bonds which would be a major step forward in expansion of capital markets. The Project includes technical assistance to support the GOP in analysing the potential for such a measure.

Discussions with financial institutions and project developers indicate that the involvement of the WB, AID, and other donors should provide a high level of comfort to other potential lenders particularly since the commercial loans would be repaid before those of the Fund. However, it is still not clear under what conditions larger subprojects with substantial foreign bank debt requirements can be implemented without a sovereign guarantee. This issue will only be really tested by experience with specific proposals and associated financial packages.

K. Private Access to Natural Gas Fields

The ANPAC cable notes that GOP policy now permits private sector power generation with low-btu natural gas as a fuel but is unclear with respect to permitting private development of the gas fields. AID/Washington is concerned that if the GOP's Oil and Gas Development Corporation (OGDC) maintains control of field development, blocking the private sector from obtaining concessions to develop gas fields, the private sector may view the prospects for low-btu gas supply as being too uncertain to allow it to undertake the risks of power generation based upon an OGDC-controlled gas supply. The Mission was requested to address this issue with the GOP and in the project design.

The GOP has indicated that it will soon ask private investors to submit proposals for gas-fired power generation based on the low-btu Nandpur gas field. The OGDC will develop the field and will provide gas to private power suppliers under long term contracts. The GOP does not plan to permit private development of the gas fields themselves. A test of the private sector's confidence in OGDC as a firm source of fuel will come shortly, when the GOP requests proposals. The project design provides for the funding of gas field development, for power generation fuel sources, whenever GOP policy will permit such development.

L. Environmental Impact

The design team should review current GOP draft standards for air and water pollution from power plants and should develop environmental criteria and requirements for all projects financed through the Fund.

The project design specifically addresses this environmental question. An environmental assessment procedure with guidelines, has been prepared as a part of the project design. The project will provide a continuing overview of the development and application of the GOP's environmental regulations as implementation of the Project proceeds through the Private Sector Power Project Environmental Advisor.

M. Donor Coordination

The ANPAC cable advised that the Mission should consider the appropriateness of cross conditionality between USAID and the WB (and other projects). The ANPAC cable suggested that the Mission formally request the Bank to call a meeting of all interested donors in the near future to discuss their rules and policies with respect to the overall private sector power program

The Mission recognizes the importance of close coordination among the donors contributing to the Fund so that they present a united front on conditionality as well as on Fund operation and procedures. The

Mission, therefore, requested the WB to convene a donors meeting to discuss critical project design issues with other donors. The WB meeting (attended by AID/W) was held in Washington in May 1988. At this meeting, the Private Sector initiative was the central focus. This Project Paper reflects the outcome of the Donor's meeting.

N. Scope of Project Activities

The ANPAC view is that the PP should permit a significant amount of flexibility regarding project scope. Project funds to support infrastructure development, such as access roads; feasibility studies and other project preparation costs, as well as resource development may be acceptable. Decisions should be made on a case by case basis according to clear criteria to be developed during project design.

The Project Paper design allows a high level of flexibility by allowing the Fund to finance all costs associated with a power sector project including supporting infrastructure and power sector related resource development and specifically providing feasibility study support for U.S. firms before subproject approval. Criteria for decisions on subproject eligibility are included in the Project design.

O. Use of Rupees Reflows

The project design team should address the use of Rupee reflows under the Fund and reach a conclusion regarding appropriate reflow programming and monitoring.

The Project design provides for the Rupee reflows from the USAID grant funds to finance a revolving fund for additional private power project financing.

P. Direct Sale of Power to Industrial Users

The PP team should examine the possibility of direct sale of power to industrial estates or plants.

This form of direct sale to consumers by private suppliers is not now planned by the GOP, but the Project Paper provides for a Special Study to examine this issue in the implementation phase to provide needed analytical support to the PPC for expansion of the policy into this area.

Q. Competition for Procurement of Goods and Services

The ANPAC cable suggested that the design team should explore means of ensuring good business practices in unsolicited proposals while not penalizing entrepreneurial initiative for U.S efforts to gain market share.

Increasingly in the U.S. the public utility commissions are looking to a competitive process to establish the realistic market cost of power. For larger subprojects, such as, for example, those using limited access fuel supplies (low-BTU gas fields, etc.) the project design encourages the use of a transparent competitive process to ensure the lowest cost power. However, the design also provides for technical assistance through the Special Studies to assist the PPC to develop a standard purchase agreement for smaller projects based on some form of avoided cost schedule. This would allow enterpreneural initiative in the development of subprojects over and above those identified by the GOP itself. The project design also addresses the concerns of AID/Washington regarding inhibition of U.S. enterpreneural effort inherent in FAR procurement regulations. Recommendations are made for the application of regulations in ways which will maximize U.S. competitiveness in Pakistan private power opportunit es. Additionally, the use of an ICI for on-lending to subprojects provides the greatest flexibility possible under AID regulations for subproject sponsonrs. Additional information on subproject procurements is provided in the Procurement Plan.

R. WAPDA's Role in Subproject Planning and Initiation

The ANPAC cable advised that the Project Paper should carefully consider the role of WAPDA in both subproject planning and initiation. Particular concerns included WAPDA's role in developing the list of subprojects, the updating of such a list, and WAPDA's role in approving projects. Specifically the ANPAC cable recommended that inclusion on WAPDA's list should not be a prerequisite for subproject funding.

The Mission recognizes the concerns about WAPDA being the sole determinant relative to which power expansion opportunities would be open to the private sector. Particularly for larger systems, the legitimate concerns of WAPDA as to plant sitings and characteristics must be recognized. The PPC will have the responsibility and authority to review WAPDA recommendations on this issue and to make modifications to reflect better balance between WAPDA and private sector sources of power supply vis-a-vis the nations needs. The commitment to open up the fuel supply from low-BTU gas fields for private sector power development is suggestive that this process is working (although donor pressures also played a part). Additionally, the policy states that unsolicited proposals will be considered. The USAID technical assistance will include development of standard contract terms for smaller projects to allow for such proposals at sites not controlled by or specified by WAPDA.

II. Additional Mission Issues

A. Is the GOP Committed to a continuing role for Private Sector Power?

The GOP has repeatedly announced its commitment to bringing the private sector into power generation, as exemplified by: the GOP policy announcement of August 1985, the solicitation of international tenders for proposals for 120 MW of diesel-electric power at Hub Chowki, the active review of the Siemens-Habibullah, Bechtel-Pyropower-Pakland, and Xenel-NIDC proposals, and the issuance of a Letter of Intent for the

130 MW coal-fired plants proposed by Siemens-Habibullah (This LOI however, expired on May 11, 1988 and is likely to be cancelled by GOP). Private Power projects for 1300 MW are incorporated in the Seventh Five Year Plan, and the GOP has agreed with USAID that at least an additional 700 MW will be required by 1993. High staff levels within the GOP are committed to a general increase in private sector activity in the country, with private sector power being an example of a broader policy. However, some parts of the public sector bureaucracy are less enthusiastic and will present a barrier which must be realistically considered.

B. Can GOP institutions implement the project without excessive levels of new institution building and the associated time delays and added bureaucracy?

The process for policy development, issuance of tenders, proposal review and approvals, and contract negotiations will all be undertaken by existing GOP institutions which will be strengthened by the project technical assistance activities and modest staff additions. These institutions are already engaged in the process and, with outside technical assistance are positioned to implement subprojects in the short term.

The Fund will be the only wholly new institution resulting from the Project. It will have a very lean structure to deal with financial issues associated with providing banking services to projects of this type. USAID has agreed to take the lead for institution building within the NDFC. The Mission is confident that the USAID will successfully develop and oversee the required institutional structure.

C. When the stated Agency and Bureau policy is not to support parastatal organizations, why is the Project supporting one?

By insisting on NDFC as the Fund implemente, the GOP has essentially forced this decision on USAID. Agreement of the WB on this approach further limits the Mission's options. However, considering the local financial environment, NDFC may indeed be the only choice, particularly in the short run. An exhaustive investigation of possible alternatives to NDFC was made by USAID and WB consultants prior to preparation of the Project Paper. The conclusion reached was that there is no currently viable alternative. The existence of Pakistani owned private banks is prohibited by law and merchant banks are non-existent. The government has rejected the idea of using the foreign commercial banks as intermediate credit institutions and the potential for foreign commercial bank involvement has always been limited due to their small size and restrictive GOP regulations. Although the GOP has recently permitted the formation of private investment companies, it is too early to assess their potential as an alternative to NDFC. A new institution would take at least 30 months to approve, five years to become operational and ten years to achieve the track record of NDFC. NDFC is the strongest and best respected of three state-owned development finance institutions in Pakistan. The GOP has been steadily liberalizing its financial markets, but creation of a private institution or assignment of important implementation responsibilities to foreign commercial banks for

the purposes of this Project is several steps ahead of when can realistically be expected. The GOP has only recently taken the big step of allowing the private sector to invest in electrical power generation. The urgency of increasing the power supply through private sector initiatives seems to the Mission to outweigh the disadvantages of having to work through a parastatal.

The project will leverage private equity and some medium-term debt capital for private energy subprojects. Furthermore, by accepting the GOP decision to use the NDFC, the Mission and the WB have already received GOP agreement on the creation of an institution within NDFC that will be more autonomous, independent and insulated from political events than affect other parts of the corporation. In the medium to long-term the WB will work to spin off a completely autonomous private institution or to increase the role of private financial institutions in this project thus supporting the USAID policy of disinvestment of parastatal institutions.

D. What is the economically justified need for private sector power over the next 5 to 10 years assuming WAPDA meets approved goals in this time period?

The publicly stated need for private sector power is to greatly reduce, if not eliminate, load shedding by the end of the current planning period. Due to unique features of the Pakistan generating system the load shedding is highly seasonal in nature with any given area experiencing about 200 to 300 hours of load shedding per year, during the periods of low reservoir capacity of the hydro sites (December through May typically). As such, the levels of load shedding measured in Megawatts are quite large but of relatively short duration. The impacts of this issue on the characteristics (load factors, dispatching, etc.) of successive increments of private power and corresponding terms of purchase agreement have not been fully examined. The purchase agreements associated with larger additions must be examined carefully to assure a rational operation of the overall utility system.

E. What evidence does the Mission have that the GOP will negotiate tariff agreements that are sufficiently attractive to encourage private sector investors?

The Ministry of Water and Power and WAPDA have come a long way in accepting a realistic price for private sector power generation. Several years ago the GOP believed that 40 paisa per kilowatt hour was the upper limit that could be offered. The feasibility studies for the development of a private sector mine using Lakhra coal provided a learning experience. Currently issued LOIs are known to be in the range of 80 to 90 paisa per Kilowatt hour. These rates reflect actual costs of obtaining financial backing and include an appropriate return on private sector investment. In the light of the GOP's commitment to reduce load shedding and increase rural electrification, these rates are expected to be acceptable to WAPDA and the GOP.

F. Is the Mission sure that sufficient demand exists for Loans and other project outputs related to investment in electricity power generation subprojects?

Over 40 proposals have already emerged in response to the GOP decision to open electrical power generation to the private sector. One LOI has already issued and accepted by the firm namely Xenil, and PPAs are being discussed with at least four different firms. The private sector appears eager to get in on the ground floor of Pakistani utility privatization. Utilities are perceived as potentially more secure and prestigious than manufacturing activities. WB and USAID interest in the Project has had the effect of convincing the private sector that the field of energy generation is a safe place to invest. Even in the unlikely event that funds are not drawn down as anticipated, the potential availability of USAID and WB financing may stimulate other important private investments in power generation. Discussions with large number of potential private sector investors and banks have indicated that the financial conditions being proposed for loans by the Fund will be viewed as quite favorable in Pakistan due to its providing essential long-term financing with grace periods which allow repayment of commercial debt during earlier stages of the subproject. Most proposing parties have indicated they will access the Fund.

G. Is there a need for an independent Utility Commission to balance the often conflicting interests of WAPDA, power sector investors, and the public?

This issue has been discussed extensively with the GOP and potential investors in private sector. The concept is an alien one in Pakistan and, at best, would take a long time to establish with little assurance of success in achieving stated goals. There is a good agreement that the structure proposed would achieve most of the objectives of a Utility Commission while still undertaking project implementation within existing institutions. Specifically, the PPC established under the Ministry of Water and Power will provide an effective balance to WAPDA as will the advice of the Interministerial Committees. Unresolvable contract disputes will be resolved through arbitration processes similar to those built into the oil and gas concession agreements. Present in-country experience regarding private sector development of petroleum concessions indicates that this is the most viable approach.

H. How will the Project interact with and support ongoing donor efforts for Tariff reform?

The implementation of the Project will further highlight and help quantify the inadequacies of the current approach to setting tariffs and factoring in the impact of the costs of new generating facilities. For example, the PPAs will provide for realistic appraisals of the cost of power from new facilities having reduced levels of donor subsidies. This will force decisions on how these costs will have to be rolled into the tariff structure.

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LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: Promote socio-economic development of Pakistan by increased electrical energy generation for social and productive uses. A-1	1. Increased electricity consumption among households, industry and government. 2. Increased economic efficiency and productivity. 3. Improved investment climate due to stable energy supplies. A-2	1. GOP published statistics 2. Socio-economic statistical reports. A-3	Assumptions for achieving goal targets: Increased power generation will result in national electrical infrastructure that will lead to increased rural and urban electrification, significantly reduce industrial costs, promote greater productivity and improve the investment environment. A-4
Project Purpose: To mobilize private sector financial resources to finance, own and operate power plants B-1	Conditions that will indicate purpose has been achieved. End of Project Status. 1. Private Sector Generation Systems contribute at least 400 MW of Pakistan's thermal power generation growth. 2. A comprehensive policy for inducing private sector participation in power generation has been formulated and is being implemented. 3. An energy finance facility has been established and provides specialized loan finance to private firms for investment in energy generation. B-2	1. GOP (WAPDA) published statistics. 2. Private corporation annual reports. 3. Stock market listings 4. USAID's records, inspection, and evaluation. 5. Site visits. 6. Public Press announcements and gazette notification of policy. 7. GOP request for proposals, evaluation and contract awards. 8. Analysis of loan application received and approved. 9. Site visits and inspections. B-3	Assumptions for achieving purpose: 1. The role of the private sector in the development of the energy section continues to be a GOP priority. 2. Stable political and economic environment. 3. Private equity contribution is forthcoming. 4. GOP is receptive and responsive to the policy and operational reform. 5. Foreign exchange requirement met through supplier's credits, foreign loans and ND banks on reasonable terms. B-4

Inputs: 1. Capitalization for power generation. 2. Technical Assistance 3. Training 4. Commodities 5. Other costs	Implementation Target (Type and Quantity): 1. $125 million and other costs for 30% of power generating equipment 2. $9.1 million in ST/LT expatriate and Pakistani technical assistance 3. $1.0 million in training 4. $2.2 million in commodities 5. $23.1 million for other costs 6. $9.6 million for inflation and contingencies Total: $170 million	1. AID & other project records and financial documents. 2. Project evaluations. 3. Project implementation reports.	Assumptions for providing inputs: - Appropriate consultants can be recruited to provide the required technical assistance - A.I.D. and GOP proposed funding levels are approved by their respective governments and disbursements are made on a timely basis - Loan requests are forthcoming from the private sector to establish power plants. - Appropriate overseas training programs are identified.
D-1	D-2	D-3	D-4

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5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES:	IS COUNTRY CHECKLIST UP TO DATE?	Yes
	HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?	Yes

A. GENERAL CRITERIA FOR PROJECT

1.	FY 1988 Continuing Resolution Sec. 523; FAA Sec. 634A. If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?	A congressional notification will be submitted prior to obligation.
2.	FAA Sec. 611(a)(1). Prior to an obligation in excess of $500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	An Intermediate Credit Institution will develop all plans and cost estimates prior to sub-project loan approval. Emphasis of project is upon ICI institution building and the transfer of a private sector power development capacity.
3.	FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?	Not applicable

4. FAA Sec. 611(b); FY 1988 Continuing Resolution Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)	Not applicable
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	Yes
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	Project is not a regional project. However, it will operate in close concert with multilateral IBRD private sector development activities and be an integral part of those efforts.
7. FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	a) Only indirectly b) Directly c) No d) Yes e) Yes f) Not directly
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	Yes, project will encourage and indeed finance large-scale U.S. private trade and investment in power sector in Pakistan.
9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	This project is financed by ESF funds. GOP will be furnishing adequate local currencies to support the project. USAID has executed a 612 (b) waiver certification with regard to U.S. owned local currencies.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

Pakistan is a near-excess currency country. No local currency can be made available for this project.

11. FY 1988 Continuing Resolution Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

Not such a project.

12. FY 1988 Continuing Resolution Sec. 553. Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

No

13. FAA Sec. 119(g)(4)-(6). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?

No. However, individual sub-projects will address these issues through the preparation of complete environmental assessment.

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)?	Not applicable
15. FY 1988 Continuing Resolution. If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?	Not applicable
16. FY Continuing Resolution Sec. 541. If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.?	Not applicable
17. FY 1988 Continuing Resolution Sec. 514. If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained?	Not applicable
18. FY Continuing Resolution Sec. 515. If deob/reob authority is sought to be exercised in the provision of assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified?	Not applicable
19. State Authorization Sec. 139 (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).	This will be done.

3. Economic Support Fund Project Criteria

a. FAA Sec. 531(a). Will this assistance promote economic and political stability?	Yes
To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?	Yes
b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes?	No
c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	Not applicable

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?	Yes
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?	Yes
3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?	There is no discrimination against U.S. marine insurance companies. If there is such discrimination in the future, commodities will be insured in U.S.
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)	Yes
5. FAA Sec. 604(g). Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those	No

countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

6. FAA Sec. 603. Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?	Not at this time. A waiver will be considered during the first evaluation period.
7. FAA Sec. 621(a). If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	Yes
8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?	Yes
9. FY 1988 Continuing Resolution Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?	Yes, requirement will be observed
10. FY 1988 Continuing Resolution Sec. 524. If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)?	Yes

B. CONSTRUCTION

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used?	A.I.D. rules, as applicable, will be observed.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?	Yes
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the CP), or does assistance have the express approval of Congress?	Not applicable.

C. OTHER RESTRICTIONS

1. FAA Sec. 122(b). If development loan repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?	Not applicable.
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?	Fund will be established by multidonor contribution. CG will have audit rights for AID-financed project activities.
3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?	Yes

4. Will arrangements preclude use of financing:

a.	FAA Sec. 104(f); FY 1987 Continuing Resolution Secs. 525, 538. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or (4) to lobby for abortion?	1) Yes 2) Yes 3) Yes 4) Yes
b.	FAA Sec. 483. To make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated?	Yes
c.	FAA Sec. 620(g). To compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President?	Yes
d.	FAA Sec. 660. To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?	Yes
e.	FAA Sec. 662. For CIA activities?	Yes
f.	FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?	Yes

g.	FY 1988 Continuing Resolution Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel?	Yes
h.	FY 1988 Continuing Resolution Sec. 505. To pay U.N. assessments, arrearages or dues?	Yes
i.	FY 1988 Continuing Resolution Sec. 506. To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?	Yes
j.	FY 1988 Continuing Resolution Sec. 510. To finance the export of nuclear equipment, fuel, or technology?	Yes
k.	FY 1988 Continuing Resolution Sec. 511. For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	Yes
l.	FY 1988 Continuing Resolution Sec. 516; State Authorization Sec. 109. To be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress?	Yes

Annex E

DRAFT LETTER

Mr. James A. Norris
Director
U.S. Agency for International Development
18, Sixth Avenue
Ramna-5, Islamabad

Subject: USAID Private Sector Power Project

Dear Mr. Norris:

As part of the agreement between our two Governments for a six year $2.28 billion economic assistance program 1987-1993, the Government of Pakistan formally requests from USAID/Pakistan one hundred and seventy million dollars ($170,000,000) in United States grant assistance for a Private Sector Power Generation Project (PSPP).

The PSPP is part of a wider Private Sector Power Generation Program being co-financed by the World Bank, Asian Development Bank, and other donor agencies that will assist the GOP in its efforts to provide electric power for industrial, social and productive uses and which will help eliminate the extremely costly power load shedding which the country is experiencing.

The PSPP, a federal project, is designed primarily to mobilize private sector technical and managerial resources to support the Government of Pakistan's objectives of increasing electric power generation. The purpose of the project will be achieved through a combination of technical assistance, training, commodity support and capitalization assistance.

The project consists of three components: (1) Institution Building, (2) Capitalization Funds and (3) Project Support.

Component 1 will strengthen the capabilities of a network of institutions required to implement the GOP's Private Power policy, which permits the private sector to build, own and operate power stations and sell electric power to the national grid. Component 2 will provide $125 million over a six year period, to an intermediate credit institution which will finance 30% of the total cost of privately owned power sub-projects. Component 3 includes three activities: the first will support studies, evaluations or analyses beneficial to the GOP to base and implement policy decisions relevant to the project; the second activity will finance a portion of the development cost of U.S. private sector power proposals; the third activity will supplement USAID's ability to oversee, implement and evaluate the entire project effort.

It is understood that the USAID Mission to Pakistan will seek approval from AID/Washington for the project at the time of submission of the project paper. It is further understood that, subject to the availability of funds, $167 million will be provided for this project over a six year period.

Based on the analyses provided in the Project Paper, the GOP recognises the necessity of certain policy decisions, regulatory assurances, and management decisions that will be required on the part of the GOP, to

create an environment in which the private sector can successfully operate. Coupled with the capital contribution in Component 2, the project will result in the construction of several privately owned and operated power plants that will sell power to the national grid.

The GOP is committed to establish and staff the necessary institutions described in the Project Paper through which the Project will be implemented. These institutions will include: a semi-autonomous Private Energy Unit in the National Development Finance Corporation; a Private Power Cell in the Ministry of Water & Power; a Private Power Cell in the Water and Power Development Authority; a Coal Mining Cell in the Ministry of Petroleum & Natural Resources; and provide additional staff in the Energy Wing of the Planning Commission. In addition, it is also understood, that in order for the Project to succeed, the power purchase agreements executed with the various sub-project sponsors would, at a minimum, include:

(A) Take or pay arrangement for a substantial portion of the generating capacity of each plant (e.g. 60 percent);

(B) Adequate power purchase prices to cover the long-run costs and an acceptable adjustment formula;

(C) Provisions for effective and timely recourse in the event that WAPDA/KESC does not pay promptly;

(D) Access to fuels required to operate private power sub-projects which are controlled by the government;

(E) A fuel price escalation clause; and

(F) Provision for arbitration of any disputes arising out of the contracts

Once the Project Agreement is signed between the GOP & the U.S. Government, AID is hereby authorized to proceed with the procurement of technical assistance, commodities, the arrangements for training for the project and to incur costs associated with these actions as necessary and in accordance with the terms and conditions of the Project Agreement.

The Government of Pakistan assures the United States Government of its full cooperation in carrying out the Private Sector Power Project. The necessary clearances, manpower, financial, and other inputs required of us will be provided in an expeditious manner.

We look forward to a continued, combined, effort by both our Governments to yield a productive and beneficial programme for the people of Pakistan.

With best regards.

Yours Sincerely,

Secretary,
Economic Affairs Division

E&E:ITD:MUH:tas
4958D

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

HEADQUARTERS OFFICE
ISLAMABAD

ANNEX F-1

PRIVATE SECTOR POWER (PSP) PROJECT (391-0494)

FAA SECTION 611 (e) CERTIFICATION

I, James A. Norris, the principal office of the Agency for International Development in the Islamic Republic of Pakistan, having taking into account, among other things, the maintenance and utilization of projects in the Islamic Republic of Pakistan previously financed or assisted by the United States, do hereby certify, pursuant to section 611 (e) of the Foreign Assistance Act of 1961, as amended, that, in my judgement, the Islamic Republic of Pakistan has both the financial capability and the human resources capability to effectively maintain and utilize the proposed Private Sector Power (PSP) project (391-0494).

This judgement is based upon the project analyses as detailed in the Private Sector Power Project Paper and is subject to the conditions imposed therein.

James A. Norris
Director
USAID/Pakistan

Date

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

HEADQUARTERS OFFICE
ISLAMABAD

ANNEX F-2

PRIVATE SECTOR POWER (PSP) PROJECT (391-0494)

FAA SECTION 612 (b) CERTIFICATION

A major purpose of the economic assistance programs negotiated between the governments of the U.S. and Pakistan, acknowledged by both governments as a primary reason for both governments having decided to develop an economic assistance package, is to provide balance of payments assistance to Pakistan.

I have carefully reviewed the advisability of disbursing U.S. dollars in lieu of U.S-owned excess foreign currency to pay for local costs of project and non-project assistance in Pakistan. In light of the U.S. Government's objectives concerning the program, I have determined that it would be prejudicial to U.S. interests and goals to pay for all local currency costs with U.S- owned rupees. Such a Procedure would prevent the U.S. from providing the maximum amount of balance of payments support under the economic assistance package, and would consequently undercut one of the basic objectives of the program. The objective of providing balance of payments assistance to Pakistan can best be achieved by disbursing U.S. dollars to pay for local costs of the program. Section 612(b) of the Foreign Assistance Act of 1961, as amended, authorizes the administrative official approving the voucher to determine that local costs will be funded with direct payment of dollars for the program. Pursuant to this provision, Handbook 19 requires that the Mission Director (or his designee) make a determination as to the reason in any instance where U.S. dollars are used (disbursed) when U.S-owned foreign currency is available. Where dollars are used for local costs financing, USAID/Pakistan will, therefore, make disbursements to the Government of Pakistan in U.S. currency.

In view of the above rationale, I, James A. Norris, principal officer of the Agency for International Development in Pakistan, pursuant to Section 612(b) of the Foreign Assistance Act of 1961, as amended, do hereby certify the need to disburse United States dollars to cover local currency costs in lieu of using United States-owned excess rupees under the Private Sector Power (PSP) Project.

James A. Norris
Director
USAID/Pakistan

PRIVATE SECTOR POWER (PSP) PROJECT (391-0494)

USAID/PAKISTAN MISSION DIRECTOR'S WAIVER FOR A.I.D. PAYMENT OF INTERNATIONAL PARTICIPANT TRAVEL COSTS

A.I.D. Handbook 10, Chapter 15b1, provides that the cost of international travel, including incidental costs en route as well as the cost of travel between the participant's city and the points of departure and return in the participant's home country, shall be paid by the host government or other sponsor unless, in the case of Mission-funded programs, the Mission Director has justified and authorized full or partial waivers and has so notified S&T/IT.

Training and institution-building are important components of the economic assistance programs negotiated between the Governments of the U.S. and Pakistan. USAID/Pakistan's experience, however, has been that the Government of Pakistan (GOP), due to serious foreign exchange and budgetary constraints, has been historically unable to fund international travel costs for short-term training programs. The consequences have been that Pakistani participants have, on numerous occasions, been denied worthwhile and much needed training, inhibiting the achievement of project targets.

I have carefully reviewed the advisability of requiring full GOP funding for travel costs for participant training of one year or less and the alternative of funding such travel with grant and loan funds provided through USAID/Pakistan to the GOP. Recognizing the objectives of many of our projects and the fact that project success will be enhanced by encouraging opportunities for short-term training, I have determined that it would be prejudicial to U.S. interests to require that the GOP pay the entire international participant travel costs for training programs of one year or less.

Therefore, on all Mission-funded training programs up to and including one year, USAID/Pakistan shall be responsible for the entire cost of the round-trip economy class air ticket and other necessary incidental costs en route. Where a PIO/P has been originally written for a program of one year or less, but, after the participant has initiated his or her program, the program is extended so that it exceeds one year in total, USAID/Pakistan shall also fund the round-trip ticket. The justification for funding programs that are extended is to minimize administrative problems which are otherwise likely to occur.

On the basis of the above justification and pursuant to Handbook 10, Chapter 15B1a, I, James A. Norris, principal officer of the Agency for International Development in Pakistan, do hereby waive the requirement that the host government fully fund international travel for training courses of one year or less and authorize payment with USAID/Pakistan loan and grant funds for travel costs as specified above.

James A. Norris
Director
USAID/Pakistan

Date

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

HEADQUARTERS OFFICE
ISLAMABAD

ANNEX F-4

PRIVATE SECTOR POWER (PSP) PROJECT (391-0494)

CERTIFICATION FOR COMPLIANCE WITH GRAY AMENDMENT

I, James A. Norris, the principal officer of the Agency for International Development in the Islamic Republic of Pakistan, do hereby certify that the acquisition plan in the Private Sector Power Project Assistance Approval Document was developed with full consideration of maximally involving Minority- and Women-Owned Firms, or Gray Amendment Organizations, in the provision of required goods and services. Set-aside opportunities for such organizations to participate in this project have been assessed and deemed inappropriate at this stage. However, such organizations are expected to compete for contract awards, and prime contractors are expected to make an effort to sub-contract, as appropriate, with these entities. During the course of implementation, further opportunities for such organizations to participate will be fully considered.

James A. Norris
Director
USAID/Pakistan

Date

ACTION MEMORANDUM TO THE ASSISTANT ADMINISTRATOR, (AA) ANE

Subject : Pakistan - Private Sector Power (PSP) Project (391-0494)

I. Problem: You are requested to determine not to apply the Cargo Preference Act provisions to procurements financed by AID under the subject project.

II. Background and Discussion: The Private Sector Power Project will finance the cost of privately sponsored power generation plants. Some of these plants may be sponsored by U.S. and Pakistani private joint venture partnerships. These joint efforts will be financed by multi-donor contributions to a window housed initially in the National Development Finance Corporation (NDFC), which will serve as an intermediate credit institution (ICI). Among other purposes, AID funds will finance importation of U.S. equipment and accessories related to power generation. All U.S. project sponsors will be competing with third country national firms who are expected to use competitively selected shipping firms. Experience in Pakistan with Power Generation Projects funded by ADB and USAID under ACE & ECE shows that requirements to use U.S. shipping firms will increase total subproject costs by approximately five percent. In many cases, this increase is expected to result in the U.S. project sponsor's proposal being rejected.

By not applying the provisions of the Cargo Preference Act, USAID and the implementing agency will be able to assure prospective Private Sector Power sponsors that they need not be concerned with preferences for U.S. Flag Cargo Ships in the event that they purchase U.S commodities with funds provided by the ICI. Consequently, they will be able more successfully to compete for contract award. USAID believes that this assurance will contribute significantly toward attracting appropriate U.S and Pakistani firms to participate in the project.

III. Authority: According to Handbook 1, Supplement B, Chapter 10, Section D2, the AA may make such a determination in consultation with M/SER/AAM and GC when grant funds are to be made available to an ICI for dollar procurement and when A/SER/AAM can determine (or reasonably forecast) that current prospective use of U.S flag ship by the countries in our region will comply with the fifty-fifty requirement. M/SER/AAM's clearance below constitutes the necessary determination or forecast.

IV. Recommendation: That you determine not to apply the provisions of the cargo preference act to the Private Sector Power Project (391-0494).

[ ] Approve [ ] Disapproved

_____
Julia Chang Bloch, ANE/AA

_____
Date

Mission Clearances: E&E:J. Morgan (draft)
E&E:D. Johnston: (draft)
CMO:A. Bilecky: (draft)
RLA:T. Carter: (draft)
PRO:P. Davis: (draft)
PDM:R. Nachtrieb: (draft)
DIR:J. Norris: (draft)

Bureau Clearances: ANE/GC: _____
M/SER/AAM: _____

DRAFT CONGRESSIONAL NOTIFICATION

AGENCY FOR INTERNATIONAL DEVELOPMENT
ADVICE OF PROGRAM CHANGE

COUNTRY:	Pakistan
PROJECT TITLE:	Private Sector Power (PSP)
PROJECT NUMBER:	391-0494
FY 1988 CP REFERENCE:	Annex III, p. 236 and 241
APPROPRIATION CATEGORY:	Economic Support Fund (ESF)
LIFE OF PROJECT FUNDING:	$170,000,000 grant
INTENDED FY 1988 OBLIGATION:	$9,000,000 grant
INITIAL OBLIGATION:	FY 1988
ESTIMATED FINAL OBLIGATION:	FY 1994

This is to advise that A.I.D. intends to obligate $9,000,000 in ESF grant funds for this project in FY 1988. This is a new project and it was listed in the FY 1988 Congressional Presentation. Planned life-of-project funding will be $170,000,000.

The project will provide to the Government of Pakistan critically needed power generation plants, built, owned and operated in the Private Sector, and mobilizing Private Sector financing that heretofore had not been accessible to the power sector. The project will promote socio-economic development in Pakistan through increased availability of electricity. A financing facility will be set up through which A.I.D., World Bank and other donor resources will be channeled, leveraging equity investment and commercial financing for Private Sector ventures in power generation.

Annex: Activity Data Sheet

ACTIVITY DATA SHEET

Purpose: To increase power generation and distribution in Pakistan through greater private sector participation.

Background: Power is critical to sustain economic growth in Pakistan. During the 1980's, real GDP grew slightly less than 7 percent per year. This growth resulted in a constantly increasing demand for power, now estimated to exceed 11 percent per year. For the past eight years, the power system has been unable to meet demand. Widespread load shedding has resulted and is expected to continue for many years. The potential market for private sector power is large. By 1993 Pakistan will need approximately 6,000-MW of additional power, requiring investments of about US $6 billion. The Water and Power Development Authority (WAPDA) will probably be able to self-finance only 40 percent of its investment program, and additional resources will be needed. USAID estimates that the Private Sector could supply as much as 4,000-MW of the additional power needed during the Seventh and Eighth Five Year Plans (1988-1998).

Project Description: The project will promote socio-economic development in Pakistan through increased electricity generation. The project purpose is to mobilize private sector resources to finance, own and operate power plants. It is intended that the project create a self-sustaining fund able to serve as a catalyst for international donors, the Private Sector, and the GOP, and eventually as a link between the Private Sector, GOP and lenders on private world debt markets who would replace the donors. The multi-donor project provides financing for resource development subprojects such as coal mines; the USAID will only consider such subprojects if they are dedicated to a Private Sector power plant, and proposed as a combined subproject. The USAID PSP project has been designed to stand alone and operate in the absence of any other donor contribution, and yet function in consonance with other donors within the framework of the World Bank Project as and when their contributions become effective.

Relationship of the Project to A.I.D. Country Strategy: The PSP Project is fully consistent with the key objectives of USAID/Pakistan's Country Development Strategy Statement (CDSS) and the draft Energy Sector Strategy, prepared by the Office of Energy & Environment in May 1988. Policy and institutional reforms, support for the private sector and donor coordination are all integral to the draft strategy, this project, and the CDSS. A specific CDSS objective is to have at least one private sector plant in operation by 1993. The Project is supportive of AID's overall development strategy and is directly related to the four pillars of policy reform, technology transfer, institution building, and private sector development.

Host Country and Other Donors: The USAID Project is part of the multi-donor program entitled "Private Sector Energy Development Program" being developed by the World Bank. The total cost of the entire program is estimated at $1.9 billion, of which A.I.D. will finance $170 million in ESF grant funds. The GOP is expected to contribute an estimated amount of $13.6 million. The GOP contribution will finance salaries and operating costs of the institutions implementing the project including locally procured commodities. In addition, it is anticipated that local currency totaling $400 million will be provided by local banks and Development Financial Institutions to finance local power plant construction costs. The World Bank has the leading role in this program and has taken the responsibility for lining up other donor contributions to the Energy Development Fund. The World Bank will provide $150 million for technical assistance and capitalization of the Fund. Other contributions are expected from Japan ($150 million), Overseas Development Agency of U.K. ($50 million), Italy ($50 million) and Canada ($30 million). All these contributions will help capitalize the Fund and will act as a catalyst in attracting private sector capital to finance plant and equipment for electric power generating facilities.

Beneficiaries: The beneficiaries of this project will be: (1) the GOP organizations that will be stengthened to review and approve private power proposals; (2) the NDFC, which will undertake on-lending to privately sponsored subprojects; (3) private sector sponsors receiving loans to undertake subprojects; and (4) households, businesses, and government entities benefiting from an increased, reliable energy power supply.

Major Outputs:	All Years
- New Power Generating Capacity.	Over 400 MW
- Establishment of a semi-autonomous Private Energy Division within NWFC to administer the Energy Development Fund to be set up with a capital of approximately $550 million. A.I.D. contribution to the Fund will be $125 million.	X
- Increased capability of WAPDA to integrate private and public sector generation and distribution activities. Coal Power Projects Department of WAPDA will be strengthened to review mining proposals. WAPDA will identify, approve and issue RFP's for private sector plants for at least seven potential sites by December 31, 1993.	X

	All Years
- Creation of a Private Power Cell (PPC) under the Ministry of Water and Power to plan, analyze, and evaluate private power subprojects. The PPC will obtain approval of PPAs for at least five subprojects by December 31, 1993.	X
- Feasibility studies by GOP for establishing one or more private electricity distribution companies.	X
- Functioning of a self-sustaining system to allow continuing inputs by the private sector into power generation.	X
- A separate loan facility to help U.S and Pakistani firms prepare prefeasibility studies in support of proposals to be submitted for financing.	X

- Personnel Training Plans:

Short-Term in U.S	50
Short-Term in-country (Years 1-5)	400
Total Personnel Trained:	450

A.I.D. Financed Inputs:	Life of Project (Dols 000)
Technical Assistance	14,110
Training	885
Commodities	2,117
Capitalization funds	125,000
Project appraisals	3,450
Project support	16,957
Contingency/Inflation	7,481
TOTAL:	170,000

U.S. Financing:	
Proposed FY 88 obligations	9,000
Future Year obligations	161,000
Estimated Total	170,000

Principal contractors or agencies:
U.S. contractors selected in accordance with A.I.D. competitive procedures.

Draft Project Description for Inclusion in ProAg Agreement

I. Project Goal and Purpose

The project goal is to promote socio-economic development in Pakistan through increased electricity generation. The project purpose is to mobilize private sector resources to finance, own and operate power plants.

II. Project Components

The AID Private Sector Power project is expected to form part of a multi-donor project, under World Bank sponsorship, entitled "Private Sector Energy Development Project". However, the AID PSP initiative has been designed to stand alone and operate in the absence of any other donor contributions.

The AID project has three components. The first is a four year institutional development effort that will require about $20.6 million. The project will finance technical assistance, training and commodities to strengthen the staff of the institutions responsible for (1) the GOP's review and approval of private sector proposals and (2) operation of Energy Development Fund.

The second component will consist of a $125 million contribution to an Energy Development Fund to be administered by the National Development Finance Corporation (NDFC). The multi-donor project anticipates contributions from at least the World Bank, Japan, ODA, Italy and USAID.

The Fund will cover up to 30% of the total cost of private sector subprojects. The Fund will lend to sub-borrowers at 14%, it is currently anticipated. Repayment will be for up to 23 years with eight years' grace. Reflows will be used to perpetuate the fund beyond the life of the project and allow for continuing loans for private sector power.

The third component sets aside some $15 million for (1) financing special studies in support of the development of private sector power generation in Pakistan and (2) concessional loan support for US and Pakistani firms submitting proposals to supply electricity to the GOP. In addition, about $3.5 million will be used to fund Mission management support, evaluations and audits.

III. Implementation Plan

A. Implementation Schedule

The project will be implemented over ten years, beginning with the Project Agreement signing, estimated to be in September 1988, and ending on the PACD o/a of September 1998.

For the institution building component, a Resident Advisory Team will be in place for four years; recruitment will begin with ProAg signing. Commodities will be ordered at the same time, and arrive over a 12 month period. AID will finance the salaries of the Pakistani staff of the Private Power Cell of the Ministry of Water and Power for a period of two years after which these salaries will become the responsibility of the GOP. Training will take place over a five year period.

After signature of the ProAg, a Project Implementation Letter will be issued transmitting the terms and conditions for use of AID grant contributions to the Energy Development Fund. The Ministry of Finance will establish a line of credit through the Pakistan State Bank in the account of the NDFC for the first tranche of funds. Subsequent tranches will be made on the basis of the rate of subproject drawdowns.

B. Administrative Arrangements

1. USAID Responsibilities

The project will be managed by the Mission's office of Energy and Environment. A US Direct Hire will be assisted by a Personal Services Contractor Project Coordinator and a Foreign Service National Project Assistant. USAID will have the following responsibilities:

- Negotiation with GOP on all matters related to the project including definition and review of financial and administrative arrangements.

- Coordination with other donor contributors to the Energy Fund; host or attend donor meetings as required.

- Initiation of periodic disbursements of funds for project implementation.

- Overall monitoring of project and subproject progress.

- With GOP, approval of Special Studies under Component 3.

- Procurement of local and expatriate technical assistance and contract personnel and management of these contracts.

- Payment of staff salaries of Private Power Cell of Ministry of Water and Power for two years.

- Off-shore procurement of commodities for Component 1.

- Participation in project evaluations.

- Post audits of the Private Energy Division of the NDFC and subprojects, as needed.

2. GOP Responsibilities

The following summarizes the responsibilities of the various GOP entities involved in implementing the project:

- The Private Power Cell of the MWP will be the main counterpart agency for this project. It will have prime responsibility for GOP technical review and approval of subprojects. The Secretary of Water and Power or his designee will coordinate project decisions with other participating GOP entities.

- Acting on behalf of the Secretary of the MWP, the Private Power Cell will monitor and report on the implementation of this project for all activities carried out in the MWP, WAPDA, EW and any other relevant agencies. Each concerned GOP entity will prepare regular reports on their respective activities and share these with all others. The PPC, PED, WPPC and EW will participate together in key project review meetings. Shared documents will include implementation plans, work plans, tender documents, contracts, studies, reports and key correspondence between the GOP, WAPDA, USAID, the WB, the ADB, other donors and contractors.

- The Private Energy Division of the NDFC will administer the Energy Development Fund. The PED will be a new division, headed by a Senior Executive Vice President that report directly to the Chairman of the NDFC. NDFC and the World Bank have agreed that a study will be carried out during the first year of the project to assess the merits of establishing the Fund as an autonomous financial institution.

- Disbursements from the Fund will be approved by the Senior Executive Vice President of the PED on the recommendation of his staff and consultants and after review by the World Bank. A 30 day objection period for AID and/or other donors will also be allowed. The PED will provide donors with quarterly reports and annual audits of the Fund as a whole as well as individual subprojects.

- The Energy Wing within the Planning Commission will be responsible for planning and policy reviews of subprojects for the GOP.

- The WAPDA Private Power Cell will be responsible for implementation activities in WAPDA. The Cell will be headed by a Director working under the policy guidance of the Member, Power.

- A variety of entities, including the WAPDA Coal Power Projects Division, the Coal Mining Cell of the Ministry of Petroleum and Natural Resources (if created) and the Energy Wing, may have responsibility for reviewing private sector proposals with mining elements.

IV. Budget

The budget for the multi-donor project, including the AID project, is summarized in the table on the following page.

Document of

The World Bank

FOR OFFICIAL USE ONLY

Report No. 7226-PAK

STAFF APPRAISAL REPORT

PAKISTAN

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

June 10, 1988

Energy Operations Division
Country Department 1
Europe, Middle East and North Africa Regional Office

PAKISTAN

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

Loan and Project Summary

Borrower: Islamic Republic of Pakistan

Beneficiaries: Private Sector Energy Development Fund to be administered by the National Development Finance Corporation, and through the Fund, private sector (PS) subprojects which meet the eligibility criteria and qualify for financing.

Amount: US$150 million equivalent.

Terms: Repayment over 20 years, including a five-year grace period at the Bank's standard variable interest rate.

Onlending Terms: The onlending interest rate from the Fund to the eligible private sector entities would currently be 14% p.a. The repayment terms for onlending would be up to 23 years including up to eight years' grace. GOP would bear the foreign exchange and interest rate risks.

Project Description: The proposed Project would provide: (a) up to 2,300 MW of power generation capacity, 2 million tons per year of domestic coal and 132 MMCFD of natural gas by FY93, financed through a newly established Energy Development Fund to be administered by NDFC, to cover up to 30% of the total cost of private sector subprojects to be implemented under build-own-operate-transfer arrangements through limited recourse financing; and (b) consulting services to train and support the staff of: (i) the institutions responsible for the approval of private sector proposals, and (ii) the Fund in the appraisal, finance of subprojects and the supervision of their implementation.

Benefits: The proposed Project would assist GOP in attracting the participation of PS in the development of energy. It would facilitate the achievement of the objectives of the Seventh Plan, and create the framework and procedures during the Seventh Plan that could lead to an even bigger PS participation during the Eighth Plan. By introducing fluidized bed combustion technology for using low-quality domestic coal in power generation and state-of-the-art coal mining and oil/gas production techniques, the proposed Project would assist in overcoming the technological barriers to energy development currently being experienced by the public sector agencies.

CURRENCY EQUIVALENTS

Currency Unit	=	Pakistan Rupees (PRs)
Rupee 1	=	Paisa 100
Rupee 1	=	US$0.0571
Rupees 1,000,000	=	US$57,100
US$1	=	Rs 17.50
US$1,000,000	=	Rs 17,500,000

MEASURES AND EQUIVALENTS

1 kilometer (km)	=	0.6214 miles (mi)
1 kilovolt (kV)	=	1,000 volts
1 megavolt-ampere (MVA)	=	1,000 kilovolt-amperes (kVA)
1 kilowatt hour (kWh)	=	1,000 watt-hours
1 megawatt (MW)	=	1,000 kilowatts (kW)
1 gigawatt hour (GWh)	=	1,000,000 kilowatt hours (kWh)

ABBREVIATIONS AND ACRONYMS

ADB	-	Asian Development Bank
ADP	-	Annual Development Plan
CDWP	-	Central Development Working Party
CIDA	-	Canadian International Development Agency
CIP	-	Core Investment Program
CMC	-	Coal Mining Cell
CMU	-	Cofinanciers' Memorandum of Understanding
ECC	-	Economic Coordination Committee
ECNEC	-	Executive Committee of the National Economic Council
EPA	-	Energy Purchase Agreement
ERG	-	Energy Review Group
ESL I	-	Energy Sector Loan I
GOP	-	Government of Pakistan
IA	-	Implementation Agreement
ICB	-	International Competitive Bidding
JEXIM	-	The Export Import Bank of Japan
KESC	-	Karachi Electric Supply Company
LES	-	Long-Term Strategy for the Development of Energy
LIB	-	Limited International Bidding
LOI	-	Letter of Intent
LRMC	-	Long-Run Marginal Cost
MMCFD	-	Million Cubic Feet per Day
MOP	-	Ministry of Production
MPNR	-	Ministry of Petroleum and Natural Resources
MPD	-	Ministry of Planning and Development
MWP	-	Ministry of Water and Power
NDFC	-	National Development Finance Corporation
NEPC	-	National Energy Policy Committee
ODA	-	Overseas Development Administration
OGDC	-	Oil and Gas Development Corporation
PMDC	-	Pakistan Mineral Development Corporation
PPA	-	Power Purchase Agreement
PPC	-	Private Power Cell
PS	-	Private Sector
SNGPL	-	Sui Northern Gas Pipelines Limited
SP	-	Security Package
USAID	-	United States Agency for International Development
WAPDA	-	Water and Power Development Authority
WPPC	-	WAPDA's Private Power Cell

GOP'S FISCAL YEAR (FY)

July 1 - June 30

The proposed Project would also introduce the concept of limited recourse financing in Pakistan which could be applied to other sectors, particularly industry and transport. The Fund to be created under the proposed Project would mobilize resources for the future development of the energy sector by recycling the revenues attributable to the interest rate spreads. These funds could be leveraged to mobilize additional resources for financing future PS energy subprojects, particularly if the study for assessing the future structure for the Fund recommends its evolution into a separate energy development finance institution.

Risks: The proposed Project faces two types of risks. The first is that the expected participation by the local financial institutions (other than the Fund) may not be sufficient to mobilize the large amount of local financing involved. Alternatively, the project-related investments may preempt such a large share of the investible local resources that the non-energy sectors might become severely constrained. In anticipation of these possibilities, GOP will allow an expansion of credit by local institutions to accommodate the incremental financing needs of PS projects in energy. Moreover, in order to avoid the possibility of overburdening the local institutions, GOP will reach an agreement with overseas investors that any shortfall in the contribution of local institutions (equity or loans) would be made up by overseas investors, on the understanding that the local institutions could subsequently assume the equity or loans when they are able to do so. The second source of risk associated with the proposed Project is that the pipeline of subprojects may not be built up to fully utilize the resources of the Fund. However, the subprojects, for which letters of intent have already been issued, would utilize about US$300 million from the Fund. Moreover, the three other proposals, which are now being prepared for submission to GOP, could utilize a further US$115 million. The above subproject pipeline was built prior to the establishment of the Fund, and it is expected that the establishment of the Fund will lead to other subproject proposals. A third risk associated with the project pertains to the possible failure of PS companies to generate the revenue required to cover their financial commitments. Revenue generation is a function of the agreed price and the quantity to be delivered to energy purchasing agencies. The price for sale of energy is stipulated in EPAs, which are structured to cover operating costs, debt service and provide returns. Automatic adjustment mechanisms would be introduced in these agreements to ensure that investors are compensated for changes in the costs of their inputs,

including the erosion in the value of the rupee relative to foreign currencies. Energy sales by PS enterprises would be carried out under a letter of credit to ensure that payments would be made in a timely fashion. As for the willingness of agencies to purchase the quantities stipulated in EPAs, the likelihood of a failure in compliance with this agreement is fairly minimal in that the investment undertaken by PS are complements rather than substitutes for public sector investments, and also that there is a substantial unsatisfied demand for energy. In addition, the EPAs are designed to allow for a delivery of specified quantities of energy for which GOP would guarantee purchase irrespective of whether the energy is taken or not under a take-or-pay arrangement. These provisions would minimize the possibility that the revenues associated with the operation of PS subprojects would not materialize.

Project Cost and Financing: (in US$ Million)

	Bank	Cofinanciers	PS Equity	PS Loans	Total
Subprojects	146	409	470	858	1,883
Technical Assistance	4	6	-	-	10
	150	415	470	858	1,893

Disbursements:

	FY89	FY90	FY91	FY92	FY93	FY94
Annual (US$ M)	11.7	33.2	41.4	43.1	17.7	2.9
Cumulative (US$ M)	11.7	44.9	86.3	129.4	147.1	150.0
Cumulative (%)	7.8	29.9	57.5	86.3	98.1	100.0

PAKISTAN

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

STAFF APPRAISAL REPORT

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This Report was prepared by Ibrahim I. Elwan (Division Chief), Suman Babbar (Senior Engineer), Raghuveer Sharma (Financial Analyst), Maria Elena Barrientos (Consultant), Catalina Cunanan, Young Ok Hong and Lesley Surridge (Secretaries).

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IBRD MAP No. 16248R

I. ENERGY SECTOR

A. Introduction

1.01 Pakistan's performance during the Fifth and Sixth Plans has been impressive relative to that of the developed and developing countries. Growth in GDP has averaged over 6% annually, spread across virtually all sectors of the economy. This growth has been accompanied by a steady decline in inflation, from about 10% in FY79 to 4% in FY87, and a generally satisfactory balance of payments situation. The Government's prudent economic management and structural reforms have contributed to the overall improvement in economic performance. The reforms included: deregulation of imports and the introduction of flexible exchange rate; rationalization of prices, particularly of crops and petroleum products; and directing public development expenditures toward priority sectors. Despite these achievements, however, a number of structural constraints continue to persist. The overall investment-saving performance remains lower than needed to support essential public and private investments without straining the balance of payments. Public sector expenditures have increased faster than resource mobilization, resulting in higher budget deficits which reached almost 9% of GDP in FY87, compared to 5% in FY80. Deficits were financed principally through increased domestic borrowing, with greater reliance on sources carrying relatively higher interest rates, raising the share of Government's interest payments in public outlays.

1.02 The Government's adjustment program for the Seventh Plan is aimed at: sustaining the growth momentum; providing essential public services; replenishing the foreign exchange reserves; and keeping inflationary pressures under control. The Government intends to increase public sector resource mobilization to free private savings and expand domestic Bank credit for private investments. This would be achieved by restructuring the tax system, improving the price system, enhancing cost recovery for public services, and emphasizing profitability of public enterprises. On the expenditure side, the Government plans to reduce producer and consumer subsidies, contain the growth of non-development spending and ensure that the targeted levels of development expenditures are not exceeded. Appropriate annual credit growth targets for the non-government sectors will be set to achieve the projected gains in real private investments. Moreover, given the relatively unfavorable outlook for increased workers' remittances, sustained improvements in exports and more effective use of foreign capital are envisaged. In the energy sector, the Government plans to continue the process of structural reforms (paras 1.07-1.19). These reforms will: emphasize resource mobilization through improved energy pricing and the rationalization of consumption through better demand management; eliminate the dependence of the revenue earning public enterprises on budgetary support in favor of direct borrowing in the capital market to reduce the Government debt; rationalize investment in the public sector to ensure that priority projects are implemented and financed within the available resources, and the shortfalls in investments undertaken by the private sector; and introduce incentives for the private sector and a framework for its operation to ensure a more prominent role in the development of energy. The proposed Project is designed to support GOP's efforts in increasing private sector investments in the energy sector.

B. Sectoral Setting

1.03 Energy Resources. Pakistan's commercially exploitable energy resources consist of hydropower, natural gas, oil and coal. The hydropower potential is estimated at about 30,000 MW. Proven and probable reserves of natural gas are estimated at about 16 trillion cubic feet (TCF) or 400 million tons of oil equivalent (mtoe) and 3.3 TCF or 80 mtoe, respectively. Reserves of oil, both probable and proven, are estimated at about 58 million tons. Coal and lignite reserves are estimated at about 900 million tons, of which only 175 million tons are proven. In addition, the country has a large base of traditional fuels in the form of fuelwood and agricultural and animal waste, which play an important role in meeting the rural consumers' energy needs. However, the supply of fuelwood which is its major component has been diminishing because of rapid deforestation. Consequently, in the foreseeable future, the share of traditional fuels in the overall supply of energy is expected to decline relative to that of commercial energy resources. Despite the potential abundance of its overall energy resources, Pakistan's exploitation of these resources remains low. The future development of energy would require the formulation and implementation of an integrated strategy for the accelerated exploitation of domestic resources, the rationalization of investments, pricing and supply, and the strengthening of institutions in the sector (paras 1.07-1.20).

1.04 Institutional Setting. Four ministries share the responsibility for the energy sector: the Ministry of Petroleum and Natural Resources (MPNR), the Ministry of Water and Power (MWP), the Ministry of Production (MOP), and the Ministry of Planning and Development (MPD). Coordination between the ministries on energy matters is provided by the Energy Wing of MPD, which acts as a secretariat for the National Energy Policy Committee (NEPC) and Energy Review Group (ERG). NEPC is responsible for the formulation of GOP's overall energy policy. The review of the investment plans of the sector and the approval of energy pricing proposals is under the jurisdiction of Economic Coordination Committee (ECC). The Executive Committee of the National Economic Council (ECNEC) and Central Development Working Party (CDWP) review and approve major proposals and projects in all sectors, including energy.

1.05 The day-to-day management of operations in the energy sector is vested in a number of public and private sector entities. The public sector entities are: the Water and Power Development Authority (WAPDA), which is responsible for developing Pakistan's water resources and for the construction, operation and maintenance of power generation, transmission and distribution facilities throughout the country, except the Karachi area; the Oil and Gas Development Corporation (OGDC) for exploration and development of oil and gas; the Pakistan Mineral Development Corporation (PMDC) for the exploration and development of mineral resources; the State Petroleum Refinery and Petrochemical Corporation (PERAC) and the National Refinery Limited (NRL) for processing crude oil; and the National Petroleum Limited (NPL) for a proposed hydrocracker project. Also involved in the energy sector are a number of semi-autonomous entities in which the Government has, either directly or through public institutions, a controlling interest. These are: Karachi Electric Supply Corporation (KESC), which is responsible for the construction, operation and maintenance of generation facilities, as well as the transmission and distribution for electricity supply in the Karachi area; Sui Northern Gas Pipelines Limited (SNGPL) and Sui Southern Gas Corporation (SSGC) for the transmission and distribution of natural gas; and the Pakistan State Oil Limited (PSO) for marketing and distribution of petroleum products. The private sector (PS) entities include: a large number of Pakistani coal

mining companies; two refineries, the Attock Refinery Limited (ARL) and Pakistan Refinery Limited (PRL); and five oil and gas development companies namely, Pakistan Petroleum Limited (PPL), Pakistan Oilfields Limited (POL), the Fauji Foundation, Union Texas and Occidental Petroleum Limited. As shown in the organization chart (Annex 1.1), all operational entities (public and semi-autonomous) are under the jurisdiction of MPNR, except for WAPDA, KESC, NRL and PRL. MWP has jurisdiction over WAPDA and KESC and MOP over NRL and NPL.

C. Developments in the Sector, FY79-FY87

1.06 The Fifth Five-Year Plan (FY79-FY83) emphasized the accelerated development of domestic energy resources and rationalization of energy prices. A shortage of financial resources and inadequate implementation capabilities impeded the achievement of the supply targets for all energy products except natural gas. The largest shortfall was in the power subsector where only 50% of the target was achieved, followed by the oil subsector where only 36% of the output target was attained. The shortfalls, together with the rapid growth of consumption, precipitated by GOP's policy of underpricing energy in an effort to stimulate economic growth, resulted in acute shortages and increased the country's dependence on imported energy. In recognition of the growing supply gap, the Government accorded high priority to restructuring the sector during the Sixth Plan (FY84-FY88). Its objectives were to accelerate and rationalize the development of energy, correct distortions in energy pricing, streamline the institutions and agencies in the sector and mobilize PS involvement in the development, production and delivery of energy. However, as these objectives were not translated into concrete policies and programs in the first two years of the Plan, only one-half of planned investments for the sector were implemented, energy prices were allowed to decline in real terms, and the institutions in the sector remained unresponsive to the pressing needs of the economy. These setbacks prompted the Government to formulate in 1985, with assistance from the Bank, a Long-term Energy Strategy (LES), covering a period of about 20 years, which outlines a program of integrated structural reforms to be implemented over five-year intervals corresponding to the planning cycle. These are discussed below under the following subheadings: resource development and energy investments; pricing, demand management and resource mobilization; institutional development; and progress in the implementation of LES.

D. Long-Term Energy Strategy (LES)

Resource Development and Energy Investments

1.07 Primary Energy. Of the country's 30,000 MW hydropower potential (para 1.03), only 2,897 MW has been developed, mainly because of delays in site selection, inadequate preparation and shortage of resources. While projects which will generate a further 1,928 MW are at an advanced stage of implementation, LES also calls for the development of another 6,000 MW by the year 2000. Of this, 5,000 MW would be in large schemes of between 1,000 MW and 3,000 MW to be implemented in sequence, and the remaining 1,000 MW, in relatively small schemes of between 100 MW and 300 MW, to be implemented concurrently with the large schemes.

1.08 The share of domestic coal in Pakistan's total energy supply has remained stagnant at about 6% over the past ten years. This is attributable to the failure of PMDC, which holds 75% of total reserves, to mobilize the resources to increase its output, and the absence of long term financing that

would stimulate PS investment in the development of its reserves. LES calls for the implementation of a program to assess the reserves held by PMDC and delineate tracts suitable for exploration and development. Also, there has been no attempt hitherto to formulate a framework for allowing PMDC to enter into joint ventures with local and international PS companies as a means of overcoming the former's technical and managerial constraints, and providing the capital to supplement its investments. In order to accelerate the development of reserves held by PS, LES calls for putting the concessions for coal on an equal footing with those in the oil and gas subsector. This would allow for the termination of coal concessions should the concessionaire(s) fail to invest in resource assessment and development within a specified period of time rather than continuing the present practice of holding to concessions indefinitely without initiating activities to develop them. Emphasis would also be placed on expanding domestic markets for coal by constructing coal-based power stations of economic sizes and appropriate technology near the mines, and providing incentives for PS to invest in the modernization of mines to increase output. However, Pakistan's output of coal is not expected to meet all of its future needs and, as a result, some coal would have to be imported to ensure that future demand for energy is met at least cost. Accordingly, LES calls for increasing the annual imports of coal from 0.5 mtoe to 5 mtoe by the year 2010 as a substitute for higher value fuels i.e. petroleum products and natural gas. This would require the development of the infrastructure for coal handling including port facilities and transport systems.

1.09 The rate at which oil and gas are being developed is far slower than the resource base warrants. LES calls for the formulation of a long-term program for exploration and development, particularly in geologically risky areas, where exploration is to be undertaken through joint ventures with PS who would provide risk capital and know-how to supplement that of OGDC. Moreover, the program would delineate the areas where OGDC is to take the sole responsibility for development, and other areas which would be developed through work programs, subcontracts, etc. with PS. LES also calls for the accelerated development of the dormant low quality gas fields and its use for the generation of electricity.

1.10 Traditional fuels' share of the rural consumers energy needs is declining because of deforestation caused primarily by the continued unrestrained use of fuelwood and the absence of a national program for afforestation to replenish the supply. As a result, the availability of fuelwood has declined forcing its price in terms of heat content to about twice the price of fuel oil. This has had adverse impact on the income of the rural and low-income households which prompted GOP to subsidize the price of kerosene whose consumption continues to rise. If this trend continues unabated, the subsidies for kerosene in the national budget would absorb the revenues generated from the sale of unsubsidized petroleum products and deny the Government one of its principal sources for mobilizing resources. Accordingly, LES proposes a household energy survey to determine the pattern of energy consumption, the potential for substitution between traditional and commercial fuels and the means for meeting the energy needs of the rural poor at least cost. Concurrently, it also calls for an assessment of the potential for increased use of solar energy for meeting low-temperature hot water needs. Finally, LES proposes the formulation of a national afforestation program to be implemented as a part of the Five Year development plans.

1.11 <u>Secondary Energy</u>. LES calls for the formulation of long-term comprehensive least cost development plan for the production, transport and

distribution of electricity, coal, gas and petroleum products to be implemented in successive five year intervals to correspond with the planning cycle. The five-year investment plans , referred to as the Core Investment Plan (CIP), would represent the minimum required to maintain the development of the sector. CIP would receive priority in terms of resources, both financial and technical. In the power subsector, investment would move towards increased reliance on domestic energy resources, such as coal and hydropower, and the use of petroleum products and gas would be allowed only when such use is deemed economic. In this respect, the use of natural gas would be shifted away from conventional base load plants to combined cycle and peaking plants. Domestic coal production should be increased to substitute for hydrocarbons in the power and industrial sectors. In order to supplement domestic coal, future increases in the thermal generating capacity for base load plants would be based on imported coal. LES also calls for the implementation of a long term plan for the reinforcement and extension of transmission and distribution to ensure that power is transported and delivered efficiently. Finally, the rural electrification networks should be expanded in accordance with a master plan prepared on the basis of economic and commercial principles.

1.12 As the demand for petroleum products increases, and also the production of oil from existing fields, the refining capacity would need to be augmented to meet the growing demand at least cost. Therefore, in order to meet the future demand for petroleum products, LES calls for increasing the refining capacity between 1989 and 2010 by 5 million tons, of which 1 million tons would be in the form of secondary refining to crack fuel oil. In addition, there is a need for increasing the storage and handling facilities for petroleum products, particularly at Port Qasim and Karachi. As for the infrastructure for the transport and distribution of natural gas, LES calls for the expansion of the processing capability to meet the increased demand and the reinforcement and extension of the distribution network in the urban areas based on a long-term plan, the implementation of which is phased over the successive five year plans.

Pricing, Resource Mobilization and Demand Management

1.13 LES calls for rationalization of energy prices to promote efficiency, better demand management and resource mobilization. To achieve this objective, prices of tradeable energy sources, such as oil and petroleum products would be set, as a minimum, at their equivalent border price plus the cost of inland handling. As for electricity, lignite and gas, which in the case of Pakistan are considered non-tradeable, the strategy calls for setting prices to cover their economic cost of supply, including a premium for depletable resources, and finance an acceptable level of their investment programs from internal sources. Moreover, the structure of prices for gas, coal and electricity should reflect the structure dictated by the economic cost of supply. WAPDA's electricity tariffs which are at about 68% of the estimated long run marginal cost of supply (LRMC) should be adjusted annually to reach parity with LRMC by the mid-1990s while ensuring that in each year at least 40% of its investment program is financed from internal sources. As the projected demand for natural gas exceeds the supply, economic pricing of this resource dictates that in order to rationalize its consumption and mobilize resources for GOP, its price to various consumer categories should be adjusted to reach parity with the prices of the petroleum products it displaces. As a first step, the average gas tariff should be increased to reach, as a minimum,the border price of fuel oil by 1993. In addition, the structure of gas tariffs should be revised and seasonal tariffs introduced to curtail

demand during the peak seasons. Prices of domestic coal would be adjusted to the economic cost of supply and provide an acceptable financial rate of return on investment.

Institutional Development

1.14 LES calls for the improvement of the efficiency of the entities in the sector by decentralizing decision making and moving towards financial and administrative autonomy. This would apply, in particular, to OGDC, which should become increasingly self-reliant in financing its exploration and development program, either through joint ventures or through internal resources. KESC would restructure its finances to ensure that revenues cover all costs and provide at least 40% of the cost of the investment program. As for WAPDA, dependence on annual allocations under the budget would be phased out through greater reliance on the commercial markets for mobilizing financing. In the area of planning, the strategy calls for strengthening the capabilities of the Energy Wing in MPD to assume the lead role in integrating the plans of the entities in the sector into a comprehensive energy development plan dictated by national priorities and taking into account financial and resource constraints. In the power subsector, LES calls for the integrated operation of the sector which would require greater cooperation between WAPDA and KESC in investment planning and exchange of power to ensure that demand for electricity is met at least cost. Moreover, the functions and responsibilities of WAPDA (both for water and power) have grown substantially over the years to a point where its operational efficiency is beginning to be strained. As a means of reducing the burden on WAPDA, LES foresees the separation of WAPDA's distribution wing into a National Distribution Corporation, which would purchase power from WAPDA and distribute it nationally. This would allow WAPDA to concentrate on the generation and transmission which would account for about 65% of the total investments in the subsector. In that event, KESC could be restructured into a privately-owned power generation corporation that would sell electricity to WAPDA, and the proposed distribution corporation to take over the distribution in Karachi. PMDC could be restructured to assume a more active role in the development of its coal reserves by entering into joint venture for the sole purpose of developing specific proven reserves. OGDC's technical and managerial capabilities should be strengthened, particularly in the area of production of hydrocarbons.

1.15 The implementation of the investment plans for the energy sector continues to be constrained by the shortage of financial resources and, to some extent, also the lack of technical know-how. The implementation capabilities of the public sector and semi-autonomous entities in the sector are also taxed and, consequently, their ability to achieve the targets under the five-year development plans are hindered. LES calls for GOP to take all the necessary measures to outline and introduce an institutional framework aimed at providing the security and incentives for PS to increase its involvement in the development of energy to complement the investments of the public sector. While PS involvement in the oil and gas subsector has been under way for several years, its role would be further strengthened with the introduction of a better compensation package and fiscal incentives. As for the power and coal subsectors, LES calls for the reduction in the investment outlays of the public sector and the delineation of specific investments that would be earmarked for consideration by PS to provide by 1998 up to 6,000 MW of generating capacity and increase the production of domestic coal by 4 million tons per year.

Progress in the Implementation of LES

1.16 To assist the Government in initiating and subsequently reinforcing and extending the reforms proposed under LES, a series of sector loans were envisaged by the Bank. Each sector loan was to support the implementation of a monitorable program of policy actions which would form the umbrella for the Bank's expanded lending for specific energy investments and for the more effective coordination of external financing for the sector. The first Energy Sector Loan (ESL I)(Ln. 2552-PAK) was made in 1985 in support of such a program covering the period FY86-FY88. The program involved a two-pronged approach. The first, which focused on minimizing the shortfalls in energy during the period FY86-FY88, concentrated on: (i) rationalizing investments; and (ii) implementing policy actions and institutional reforms needed to mobilize resources for priority projects, restrain the growth of demand for energy and enhance the planning and project implementation capabilities of the entities involved in the sector. The second called for studies that would provide the inputs needed for the formulation of an integrated least cost development plan for energy.

1.17 As a first step toward rationalizing investments, a Core Investment Program (CIP) was outlined in ESL I for the remaining three years of the Sixth Plan. The CIP consisted of high priority projects which, when aggregated within and across subsector, were designed to meet the forecast demand at least cost. The sources of financing for each project in the CIP were identified, including the contribution of the Government through the Annual Development Plan (ADP) and that of the sector entities from their internally-generated funds. To date, progress in the implementation of the CIP has been satisfactory. The four public sector entities and the four semi-autonomous entities covered under the loan are all expected to fully implement the agreed priority projects, although actual investments are expected to be about 10% lower than was originally envisaged, because of lower than anticipated price for equipment and materials. In fact, cost savings together with the more efficient deployment of resources enabled OGDC to reduce its expenditures to a level below those allocated under ADP and yet implement a larger program than was agreed to under ESL I. The satisfactory implementation of the CIP clearly reaffirms the Government's commitment to LES in general and to the rationalization of investment in particular.

1.18 In order to restrain the growth of demand for energy, and mobilize resources for the priority projects, agreement was reached under ESL I on the rationalization of both producer and consumer prices. As producer prices of gas were insufficient to provide incentives to PS to undertake exploration and development, GOP adopted a new formula which links the price paid to producers to the border price of fuel oil. The response of PS has led the government to consider the application of this formula to new fields which were already discovered, but not yet in production, and to future gas fields which could be developed in existing concessions. The consumer price of natural gas has also been increased five times since July 1981, averaging about 24% annually in nominal terms. As of July 1987 the weighted average consumer price of gas was at about 80% of the border price of fuel oil which is well above the target of 66% agreed with the Bank. Power tariffs, which had remained virtually unchanged since 1981, were also adjusted in FY86, FY87 and FY88, to enable WAPDA to finance 40% of its CIP from internal sources. In addition, the Government has initiated a load research and demand management study which would provide the means for introducing a structure of tariffs that are based on marginal cost and for reducing power demand during peak periods.

1.19 As for institutional reforms, the Government has taken concrete steps to encourage PS involvement in energy development, which the proposed Project would further strengthen and support. In addition, GOP has established a National Energy Conservation Center for the overall coordination of energy conservation activities and an office of Energy Planning to address substantive policy issues. The latter was merged with the Energy Wing of MOP (para 1.02) to streamline planning activities. The Government has completed studies to reorganize WAPDA and restructure PMDC. Furthermore a program to strengthen the financial, technical and managerial capabilities of OGDC has been initiated.

E. The Seventh Five-Year Plan for Energy (FY89-93)

1.20 The Seventh Five-Year Plan for energy, which was prepared by the Energy Wing of MPD, was reviewed and found satisfactory by the Bank. The Seventh Plan's objectives and strategy are largely a continuation of those of the Sixth Plan (para 1.07) with the added emphasis on actions to increase the reliance on the financial resources and expertise of PS for energy development and production. The total investment required to meet energy supply targets during the plan period is estimated at Rs 200 billion (US$11.6 billion) in nominal terms. The public sector investment program which is achievable in terms of implementation capability and availability of financial resources during the Seventh Plan amounts to Rs 128 billion (US$7.3 billion), representing 64% of the total energy investment in the plan while that for the semi-autonomous agencies amounts to Rs 32 billion (US$2.0 billion) representing 16%. The remaining Rs 40 billion (US$2.3 billion) representing 20% of total energy investment is expected to be mobilized through the PS. In physical terms, the public sector's investment program in power would add 3,600 MW of generation capacity by FY93 and extend and reinforce the transmission and distribution networks. Investments planned to be undertaken by KESC would add about 420 MW of thermal generation capacity, leaving a requirement of 2,300 MW to be provided by the PS. Together, these investments would achieve the objectives of the Seventh Plan and provide a smooth transition into the Eighth Five-Year Plan (FY94-FY98). In the oil and gas subsector, to increase the supply of oil and gas by 16 mtoe per year by FY93, public sector investments would be utilized to drill 65 exploratory wells and 100 development wells, while PS is expected to drill another 60 exploration wells and 150 development wells. In the coal subsector, to increase the coal supply by about two million tons per year by FY93, PMDC's investment would finance the drilling of 60 exploratory bore holes as well as development and expansion schemes, while PS would invest in drilling an additional 600 bore holes.

F. Past Investment and Future Strategy of the Bank Group

1.21 The Bank Group's involvement in Pakistan's energy sector began in 1955, with a loan to KESC for the construction of a thermal power station. Since then, it has assisted in implementation of projects in all energy subsectors. In the power subsector, the Bank has participated in the Indus Basin Development Projects, which include the hydro developments at Mangla and Tarbela. A series of four credits/loans were made to KESC between 1955 and 1967 for the development of its generation capacity. Since 1970, the Bank has been more directly involved in GOP's program for the expansion of generating capacity and transmission and distribution networks, for which seven credits/loans were made to WAPDA. The first (Cr. 213-PAK) of US$23 million, made in 1970, covered the cost of upgrading the transmission network. The second operation, a Third Window Loan (Ln. 1208T-PAK) of US$50 million,

subsequently reduced by US$15 million due to savings achieved under international competitive bidding, was made in 1975 to finance the development of part of the 500-kV transmission system to connect the hydro resources of the north with the thermal generation in the center and south in order to provide the most economic means of supplying power throughout the country. The third operation (Cr. 968-PAK) of US$45 million was made to cover four years of WAPDA's program for the development of the secondary transmission system (FY79-FY83), involving the erection of about 4,345 km of single and double circuit lines and the construction, expansion and reinforcement of 216 substations. Implementation of this project has been completed satisfactorily.

1.22 In the petroleum subsector, the Bank has had a long relationship with three principal entities, SNGPL, OGDC and NRL. The first Bank loan to SNGPL (377-PAK) in 1964 for US$15 million, was made to finance construction of the Sui to Lahore pipeline. The second loan (597-PAK) in 1969 increased SNGPL's capacity to deliver gas to the Dawood fertilizer plant. The third loan (696-PAK) for US$19.2 million in 1970, the fourth loan (1107-PAK) for US$60 million in 1975, and the fifth loan for US$43.0 million in 1983 were all made to SNGPL, and have cumulatively achieved the technical objectives of expanding the transmission and distribution system for the northern part of the country to a present capacity of 450 MMCFD. In the exploration and development field, the first lending operation to OGDC was a credit of US$30 million for Toot Oil Development I (867-PAK) which was made in 1978. In support of GOP's continuing efforts to increase petroleum exploration, a loan (2351-PAK) of US$51.5 million was made to OGDC in 1983 followed by the Toot Oil and Gas II loan (2374-PAK) in 1984 to improve the reservoir drainage and other surface facilities at the Toot oil field. The Bank has also financed a Refinery Engineering and Energy Efficiency loan (2218-PAK) to the National Refinery Limited (NRL) in 1982 for US$12 million which has been satisfactorily completed.

1.23 ESL I (2552-PAK), made in support of measures to be implemented during the last three years of the Sixth plan to minimize the shortfall in achieving the plan targets and maintain a smooth transition into the Seventh Plan, provided resources for the ongoing projects to be implemented in FY86-88. In addition the Bank has made investment loans to support the implementation of LES. Fourth WAPDA (2499-PAK) and Fifth WAPDA (2556-PAK) power loans, which coincided with the preparation of ESL I, support the extension and reinforcement of the high and medium voltage transmission networks to evacuate the power to be generated by plants under construction and reduce technical losses. Kot Addu Combined Cycle loan (2649-PAK) supports the expansion of generating capacity of WAPDA based on combined cycle technology, representing the state-of-the-art in terms of efficiency in the consumption of hydrocarbons. Petroleum Resources and Joint Venture loan (2553-PAK) supports GOP's objective of accelerating the development of hydrocarbons through joint ventures with PS firms which would supplement OGDC's technical capabilities and financial resources. Power Plant Efficiency Improvement loan (2798-PAK) assists in implementing one of the key objectives of LES in the area of secondary energy. It supports WAPDA in improving the efficiency of its power plants to reduce fuel consumption, reduce maintenance time and forced outage of plants and provide additional capacity from existing plants. Implementation of these projects is progressing satisfactorily, with the exception of Fourth and Fifth WAPDA Power Projects which are behind schedule by over one year because of delays in the preparation and clearance of the bidding documents. This since has been resolved and currently most of the bidding documents have been issued and a substantial number of contracts awarded. A follow-up Refinery Energy Conservation and Modernization loan

(2842-PAK) for US$21 million was also made to the same entity in 1987 to reduce refinery energy consumption and modify the NRL refinery output mix to better match demand.

1.24 The implementation of ESL I has provided a framework for the coordination of donors' assistance for the implementation of the policies and core investment program agreed with GOP. The framework has facilitated the Bank and ADB to coordinate their lending with that of the bilateral agencies, and also to mobilize resources for GOP. In turn, this has enabled the Bank to become effective in assisting GOP to initiate restructuring the energy sector and mobilize additional funding for investment in the sector. A second sector loan, ESL II, would provide the umbrella of policies to be introduced during the Seventh Plan, identify investments which would be critical to the achievements of the plan objectives, and reach agreement with GOP on a monitorable program of actions for restructuring the energy sector. The Bank's own financial support for specific investment agreed under the core investment program would be kept to a minimum to allow for a higher level of cofinancing. Priority would be given to increasing the involvement of PS in the development of energy, and accelerate the development of infrastructure for the transport, storage and distribution of oil, gas and petroleum products. In particular, support would be provided to OGDC in promoting greater involvement of PS in the development of gas and oil. Finally, assistance would be extended to WAPDA in the implementation of small hydropower schemes and in the extension of the low-voltage network in the rural areas.

II. THE PROJECT

A. Overall Structure

Project Setting

2.01 The Fifth Plan called for the increased participation of PS in the development of energy resources. Success in achieving this objective was limited to the oil and gas subsector. PS investments in the coal and power subsectors remained stagnant, mainly because of inadequate incentives. In an effort to address the constraints experienced under the Fifth Plan, the Sixth Plan provided for the increased involvement of PS in energy development as one of its priorities. However, as specific policies to achieve this objective were not introduced, PS investments increased only marginally during the first two years of the Plan. Subsequently, LES reaffirmed GOP's emphasis on the development of a more prominent role for PS to overcome the shortage of resources and the constraints on the implementation capabilities of the public sector (para 1.06). As a first step in the implementation of LES, GOP announced, in November 1985, several measures aimed at stimulating PS interest in the power and coal subsectors. These included: (a) treatment of PS power plants as industrial undertakings, thereby making them eligible for fiscal incentives available to industry; (b) extension of income tax holiday for coal mining in new areas; and (c) exemption of mining and power generation equipment from import duties. Despite these measures, the response of PS was inadequate. Proposals for the expansion of coal mining and power generation capacities required extensive support in terms of subsidies, guarantees and compensations.

Project Preparation

2.02 In 1987, GOP requested the Bank Group[1] to assist with the initiation of a plan to increase PS participation in energy development. At the outset, the forecast of energy consumption for the Seventh and Eighth Plan period was derived, based on: (a) the projected rates of growth for the main sectors of the economy which correspond to an average annual rate of growth in GDP of 5%; (b) increases in the prices of petroleum products to maintain them at their present level relative to their equivalent border prices; and (c) increases in the prices of natural gas, coal and electricity to generate 40% of the investments from internal sources and achieve parity with the economic cost of supply by the end of the Seventh Plan, and maintain them constant in real terms thereafter. This analysis showed that the average annual rate of increase in the consumption of energy would be 7.0% for the Seventh Plan and 6.0% for the Eighth Plan. The investments needed to meet the forecast consumption of energy at least cost were identified by selecting new projects which, together with existing facilities, would minimize the capital cost of new projects and the operating costs of existing and new projects. The results provided the annual outlays in terms of foreign and local currencies for each project, whose sum represented the total investments required in the Seventh and Eighth Plans. In order to divide these investments between the public and private sectors, the investments to be undertaken by the public sector were estimated by: (a) increasing the average investments of each entity over the last three years of the Sixth Plan by 3% in real terms to reflect improvements in their implementation capabilities; and (b) limiting the increases in the prices of energy produced by them to a maximum of 10% annual nominal increase and the coverage of 40% of the yearly cost of their investments from internal sources. The difference between the overall investments required to meet the forecast demand at least cost and the estimated investments which could realistically be undertaken by the public sector represent the shortfall in investments which, if not undertaken, would result in shortages in energy supply.

2.03 The projected shortages in energy supply to meet the demand during the Seventh and Eighth Plans would be significant: (a) the deficit in electricity supply would increase from 1,000 MW in 1988 to 2,000 MW by 1993 and 4,000 MW by 1998; (b) the shortfall in the supply of coal would increase from 2 million tons in 1993 to 4 million tons in 1998; (c) the shortage of natural gas would increase from 132 MMCFD in 1993 to 200 MMCFD in 1998. These shortfalls would impede the growth of the economy through frequent and prolonged interruption in the supply of electricity to industry and agriculture, which together account for 75% of total consumption of electricity, 50% of the annual coal production and 60% of natural gas consumption. Alternatively, if substitute fuels are to be used to eliminate the expected shortages, the annual cost of substitute imports of petroleum products would reach US$200 million by 1993, and increase to about US$400 million by 1998. This would have an adverse impact on the economy, particularly in view of the expected constraints on the availability of foreign exchange during the Seventh and Eighth Plans. The constraints on the implementation capabilities of the public sector, shortage of financial resources, and the need to sustain the growth of the economy were critical in inducing GOP to aggressively pursue PS involvement in assuming the leading role for bridging the expected shortages in energy supply. In order to ensure

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[1] IFC has participated in the preparation and appraisal of the proposed Project.

the timely implementation of the Seventh and Eighth Plans, GOP decided that PS investments in energy would be undertaken under build-own-operate-transfer (BOOT)[1] arrangements involving the design, construction, commissioning and operations of projects by investors, and the transfer of the facilities to the Government after the completion of their economic life. In addition, since public investments had to be rationalized to reduce the burden of the development plans on the national budget, only BOOT projects involving limited recourse financing would be considered. This would contribute to the reduction of the GOP's debt burden in the future while providing resources needed for development. The targets for PS investment during the Seventh and Eighth Plans approved by GOP are summarized in Table 2.1.

Table 2.1:
Incremental Capacities to be Financed by
PS Investments During Seventh and Eighth Plans

	Seventh Plan	Eighth Plan
Power Generation	2,300 MW	2,400 MW
Coal Production	2 million tons/year	3 million tons/year
Natural Gas	132 MMCFD	200 MMCFD

The impact of PS investment during the Seventh Plan on WAPDA's tariffs was assessed, assuming that electricity purchased by the Authority would be priced at economic cost of supply, to cover 40% of WAPDA's average annual investment from internal sources as agreed with the Bank. The average tariff for sale to consumers would increase at an average annual rate of 8% with investment by PS, compared to 10%, if WAPDA would implement the same capacity as a part of its investment program.

2.04 In order to identify the institutional and policy constraints that could hinder the achievement of the targets set for investments by PS, a study was undertaken by the Bank, with the assistance of Arthur D. Little (US consultants), financed by the United States Agency for International Development (USAID), and Coopers & Lybrand Associates (UK consultants), financed by the Overseas Development Administration, United Kingdom (ODA). The study recommended:

(a) strengthening the institutions responsible for the evaluation and approval of PS proposals;

(b) creating a vehicle to provide long term financing for PS investments; and

(c) designing a framework of incentives for PS development of energy.

These recommendations were reviewed and agreed with GOP, and as a first step towards their implementation, ECC approved on November 22, 1987 the creation of a Private Sector Energy Development Fund (Fund) to be administered by the National Development Finance Corporation (NDFC), one of the principal development finance institutions in Pakistan, and the beneficiary under several Bank operations.

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[1] This approach to project development is also referred to as build-operate-transfer (BOT). The difference lies mainly in the time horizon involved in the transfer of facilities. Under BOT, the facilities are transferred at the end of a lock-in period of ten years or less.

Project Objectives

2.05 The proposed Project would assist GOP in: (a) mobilizing resources for cofinancing private sector investments in energy development to contribute towards the achievement of the objectives of the Seventh and Eighth Plans; and (b) setting an institutional framework to sustain PS investment and operation in the energy sector.

Project Description

2.06 The proposed Project would provide:

(a) up to 2,300 MW of power generation capacity, 2 million tons per year of domestic coal and 132 MMCFD of natural gas by FY93, financed through a newly established Energy Development Fund to be administered by NDFC to cover up to 30% of the total cost of private sector subprojects to be implemented under build-own-operate-transfer arrangements through limited recourse financing; and

(b) consulting services to train and support the staff of: (i) the institutions responsible for the approval of private sector proposals, and (ii) the Fund in the appraisal, finance of subprojects and the supervision of their implementation.

Project Cost and Financing Plan

2.07 The estimated total cost of the proposed Project is about US$1,893 million equivalent. The proposed Bank loan of US$150 million, together with loans and grants from bilateral aid agencies, amounting to US$415 million, would finance the Fund and consulting services. The remaining US$1,328 million would be provided by PS, comprised of US$470 million (25%) equity and US$858 million (45%) in local and foreign commercial loans and suppliers' credits. Of the total PS equity, about US$235 million would be in foreign exchange and the rest would be provided by Pakistani institutional and individual investors.

Table 2.2:
Project Cost and Financing
(in US$ Million)

	Bank	Cofinanciers	PS Equity	PS Loans	Total
Subprojects	146	409	470	858	1,883
Consulting Services	4	6	-	-	10
	150	415	470	858	1,893

The proposed loans and grants from the Bank and bilateral agencies to finance the Fund would be made to GOP with sovereign guarantee. The commercial loans and suppliers' credit of US$893 million would be provided under a limited recourse financing arrangement involving no direct sovereign guarantee.

2.08 All subprojects approved by GOP and financed by the Fund should meet the eligibility criteria, which among other things, requires that prices for energy produced by subprojects are lower than the cost to the economy of

producing the same product. Presently, proposals for the installation of about 2,000 MW have either been approved in principle (subject to subsequent appraisal) or are under review by GOP. In addition, proposals are under preparation for increasing the output of domestic coal. These proposals were used to derive the estimated cost of the proposed Project (Annex 2.1). Letter of Intent (LOI) have been signed by GOP for the following proposals:
(a) Habibullah Mines of Pakistan and Siemens of Germany to install 2X50 MW and 2X15 MW power stations, based on domestic coal, at a total cost of about US$158 million; and (b) Xenel Industries of Saudi Arabia and Hawker Siddeley Power Engineering of the UK to install 4X300 MW oil-based steam power stations at a total cost of about US$840 million; and (c) Fecto of Pakistan to install 6X20 MW diesel units at a total cost of about US$70 million. In addition, two proposals are currently under review: (a) a consortium comprising Pakland of Pakistan, and Pyropower and Bechtel of USA to install a 3X44 MW station, based on domestic coal, at an estimated cost of about US$165 million. Currently, the above consortium is negotiating the incorporation of a local mining company which would contribute equity to the subproject and develop unexploited but proven reserves of coal to produce 700,000 tons of coal to supply the stations; and (b) INTRAG of USA to install a 1X80 MW station, also based on domestic coal, at an estimated cost of about US$113 million. Three other proposals are currently at an advanced stage of preparation:
(a) Deutsch Babcock of Germany to install a 2X80 MW domestic coal-based station, at an estimated cost of about US$207 million, which would also include the development of a privately-owned coal mine dedicated to the station; (b) a 140 MW hydroelectric power station at an estimated cost of US$210 million; and (c) Kumagai-Gumi of Japan and Davy McKee of UK, in a joint venture with PMDC, to develop a coal mine at Lakhra for the production of 1.2 million tons per year at an estimated cost of US$180 million. All proposals have been prepared in accordance with the Bank's guidelines, and would be appraised by the Fund, following the appointment of consultants to assist in this task (para 2.09).

2.09 The proposed Project includes a provision of US$10 million to cover the cost of consultancy services and training, which would be financed by the Bank (US$4 million), USAID (US$5 million) and ODA (US$1 million equivalent). This would provide about 120 manmonths of long-term advisory services, 290 manmonths consultancy support and 30 manmonths for training. The consultancy services for the power subsector would be administered by MWP, and by MPNR for petroleum and coal subsectors. NDFC would manage the training and consulting services for the staff administering the Fund. The proposed Bank loan, and the grants from USAID and ODA, would finance the consulting services required to assist MWP and MPNR in review and approval of subprojects and the Fund appraisal and supervision of subprojects. Details are provided in Annex 2.2.

B. Institutional Framework

2.10 So far PS proposals have been dealt with on an ad hoc basis rather than within a comprehensive framework that outlines the institutions and procedures involved. In addition, the absence of adequately trained staff to support the decision makers has been responsible for the delays in the review and approval of proposals. As a result, PS interest in the energy sector was dampened. If GOP is to achieve the level of PS investments envisaged under the Seventh and Eighth Plans, existing institutions should be rationalized, their capabilities strengthened, and procedures streamlined. This would be achieved under the proposed Project within the existing organizational structure. The timetable for implementing the institutional improvement is presented in Annex 2.3. MWP would be responsible for approval of power

proposals, and MPNR for oil/gas and coal proposals. The ministries would, on a case-to-case basis, seek the views of other ministries and entities concerned, e.g. Planning, Transport, Finance, WAPDA, KESC, SNGPL, etc. In addition, the creation and operations of the Fund would provide the long-term financing required for PS investment, the appraisal of PS subprojects and the supervision of their implementation in accordance with standards acceptable to the Bank and cofinanciers. The proposed Project would assist GOP in increasing PS investments under a BOOT arrangement through limited recourse financing. This approach to project development would require a set of criteria, measures, provisions and agreements which, together, referred to as Security Package (SP), that safeguards the interests of the lenders, investors and the Government. SP is intended to minimize the impact of identified risks. GOP has requested the Bank to take the lead in outlining a framework for SP to serve as a basis for the formulation of subprojects specific SPs to be agreed among those involved. The role of the institutions involved with PS operations is discussed below and SP is outlined in Chapter III. The outline of the process involved in the review and approval of PS proposals by GOP, and the appraisal and supervision of PS subprojects are presented in Annex 2.4.

MWP and MPNR

2.11 PS proposals for power subprojects have been submitted to MWP in response to GOP's policy announcement in November 1985 (para 2.01). Uncertainties concerning required scope of proposals, evaluation process and criteria, and timetable for approval have been responsible for the limited response of PS. In order to assist GOP, the Bank has provided interim guidelines for the formulation and review of proposals. These guidelines should be elaborated, formalized, documented and publicized. MWP and MPNR would need the support of experienced consultants to prepare a brochure outlining the policy framework, the format for proposals, evaluation criteria, and drafts of all agreements required (para 3.07). PS proposals would be submitted by the investors to the concerned ministries for review, which would be followed by negotiations with investors. Upon successful completion of negotiations, the concerned ministry would seek ECC's approval of the subproject. MWP, MPNR, the Fund and the energy purchasing entity would review the proposal for technical viability, integration into the national energy plan, financing arrangements and price. There is a need to formalize the process of review and approval of PS proposals. MWP and MPNR would require the services of consultants, with experience in the preparation and evaluation of PS energy projects, to assist in the preparation of the brochure. The consultancy effort required for this task would be about 35 manmonths. Therefore, in order to ensure the timely preparation of the brochure describing policies and procedures for evaluating PS proposals, the preparation of a brochure, satisfactory to the Bank, detailing the guidelines for the preparation, review and evaluation of PS proposals, will be a condition of loan effectiveness (para 5.03(a)).

2.12 The implementation of GOP's policy of increasing PS involvement in the power subsector is the responsibility of the Secretary in MWP, assisted by the Additional Secretary for Power. In MPNR, the Director-General, Petroleum Concessions and Secretary, Mineral Coordination Board assist the Secretary to deal with PS in the coal and petroleum subsector. The secretaries and their directors are qualified and competent administrators; however, in both ministries, they are not adequately supported by experienced staff. A Private Power Cell (PPC) in MWP and a Coal Mining Cell (CMC) in MPNR are needed to provide technical support to the Secretaries. PPC would be headed by a Director General, supported by five professional staff. The Director General

would be a qualified engineer with experience in management of power utilities with special emphasis on system operation, power supply contracts, and supervision of projects. He would be assisted by two power engineers with experience in the operation of power systems, appraisal of power projects, and contract management. The Cell would also require two financial specialists with experience in project finance, financial management of power utilities and the development of computer-based financial models. The Director General for Mining at MPNR would be supported by specialists in coal mining, geology, and finance. The coal mining specialist should be experienced in the construction, operation and management of mines. The geologist should be experienced in geological investigation of mining reserves, review of geological data and mine plans. The financial specialist should be experienced in financial management of companies dealing with coal mines. As for the Directorate for Petroleum Concessions, it has had a long tradition of monitoring PS operation in the sector and it is currently being strengthened under USAID and CIDA financing. In order to strengthen the institutional capabilities for mobilizing PS investments for energy development, the establishment and staffing, satisfactory to the Bank, of a Private Power Cell in Ministry of Water and Power, and a Coal Mining Cell in Ministry of Petroleum and Natural Resources, to strengthen the institutional capabilities for mobilizing PS investments, will be a condition of loan effectiveness (para 5.03(b)).

2.13 PPC and CMC would require the support of specialized consultants to assist in the review and evaluation of proposals and negotiations of agreements under SPs. The staff of PPC and CMC, although experienced, would require training in the review of PS proposals, development of software for evaluation and financial analysis, use of export credits and commercial financing, particularly under limited recourse arrangements. This task would require about 50 manmonths of consulting effort. The draft Terms of Reference for the consultancy services would be reviewed during negotiations. In view of the critical role PPC and CMC would play in processing the PS subprojects and in order to strengthen their capabilities, GOP agreed, during negotiations, to appoint, no later than December 31, 1988, consultants under terms and conditions satisfactory to the Bank, to assist PPC and CMC in the review and evaluation of private sector proposals, negotiation of Implementation Agreement and other agreements under the Security Package, and training of their staff (para 5.01(a)).

WAPDA

2.14 WAPDA currently meets its power needs from its own generating stations and power purchases from KESC. As a result of GOP's policy of encouraging PS participation in power generation, WAPDA's sources of supply are expected to be diversified with the commissioning of a number of privately owned power plants. This would raise complex issues regarding load dispatching, compensation, penalties for failure to perform, etc. WAPDA, at present, has no single group responsible for coordination of the operation of privately owned power plants and negotiation of long-term power purchase agreements. As the contractual and technical aspects of the operation of PS power plant would involve coordination with a number of groups in WAPDA, e.g. load dispatch, system operation, finance, system planning, etc., there is a need for a WAPDA Private Power Cell (WPPC) to negotiate and administer power purchase agreements and coordinate the operation of privately owned power plants within WAPDA's system. WPPC should be headed by either an engineer or a finance specialist reporting directly to Member, Power. The head of the WPPC should be assisted by a power engineer with experience in power system

operation, load dispatch, commercial aspects of bulk power transfers, and a financial analyst with experience in financial management of power utility. In order to ensure that WAPDA is adequately prepared for the negotiations of the first power purchase agreement, which is expected in October 1988, as a condition of loan effectiveness, GOP will cause WAPDA to establish and staff, satisfactory to the Bank, a private power cell in the Authority (para 5.03(c)).

2.15 Although WAPDA has the engineering expertise in the areas of system operation, power plant design, etc., it has limited experience in reviewing, negotiating and administering long-term power purchase agreements and coordinating the operation of privately-owned source plant. WPPC would, therefore, require consultants' services to support and train its staff. The consultants services required for this purpose are estimated at about 15 manmonths. The terms of reference for consultancy services would be reviewed during negotiations. In order to strengthen WAPDA's capabilities in negotiating and administering power purchase agreements, GOP agreed, during negotiations, to cause WAPDA to appoint, by December 31, 1988, consultants under terms and conditions satisfactory to the Bank to assist and train the WPPC staff in reviewing, negotiating and administering all aspects of power purchase agreements (para 5.01(b)).

Private Sector Energy Development Fund

2.16 In view of the size of the projected portfolio of the Fund, there could be merit in setting it as an independent, publicly or privately owned, financial institution. However, the creation of a new institution would require about two years in view of the extensive work needed to outline the future role of the Fund, sources of financing for its future operations, financial performance criteria, guidelines for operations, and staffing. PS investments cannot be held in abeyance during this period jeopardizing the achievement of the objectives of the Seventh Plan, particularly in view of the fact that public investments were reduced because of constraints on government finances. PS resources for financing energy sector should materialize at the initiation of the Plan. The Fund, therefore, needs to be established immediately. This can only be achieved by its establishment as a functional unit of an existing financial institution. GOP has designated NDFC to administer the Fund. The latter's operations would, however, be structured to allow for possible future detachment from NDFC at a later date. Consequently, the development of the Fund would be implemented in stages. The first stage would cover its establishment, the recruitment of the core staff and the appointment of consultants to support the operations during the first few years. The second stage would involve the recruitment of consultants to design the organizational structure for the Fund, prepare the operation manuals, and staffing strategy. The third stage would cover a study by the consultants to assess the feasibility of establishing the Fund as an autonomous finance institution. GOP agreed, during negotiations, to appoint, by October 31, 1989, consultants whose qualifications, experience and terms of reference are satisfactory to the Bank, to undertake a study to assess the merit of establishing the Fund as an autonomous finance institution; and to review, with the Bank by March 31, 1990, the results of the study and agree on a timetable for the implementation of the agreed recommendations (para 5.01(c)).

2.17 The Fund would be administered by NDFC through a Division specially created for that purpose. The relationship between NDFC and the Fund is presented in Annex 2.5. The terms and conditions under which NDFC would manage the Fund would be set out in an administration agreement between GOP

and NDFC. The manager of the Fund should be at the level of senior executive vice president/deputy managing director. He should report directly to the Chairman. He would be supported by an executive vice president and two senior vice presidents with proven expertise in the areas of engineering and finance. The executive vice president will supervise and coordinate the functions of the senior vice presidents, finance and engineering. The senior vice president for engineering would be responsible for the technical appraisal and supervision of subproject implementation. The senior vice president for finance would be responsible for the financial appraisal of subprojects, assessment of the adequacy of financial plans and review of the SPs, and supervision. The senior vice president for engineering would be supported by three engineers with experience in the area of power generation and coal mining, a specialist in contract management and procurement and an environmental specialist. The senior vice president for finance would be supported by two finance specialists. The proposed staffing for the Fund, which represents the core team, would be supported by consulting firms and financial advisors with expertise in project appraisal, engineering and supervision, and in investment banking. The Fund should be legally established and staffed before September 1988, when the first request for subproject financing is expected. Therefore, the establishment and staffing of the Fund, and the execution of an Administration Agreement between GOP and NDFC, satisfactory to the Bank, will be a condition of loan effectiveness (para 5.03(a))

2.18 The staff of the Fund would require the support of consultants to outline the guidelines for the operations of the Fund, including its operating, reporting, and monitoring procedures. Until the consultants' work is completed and its recommendations reviewed and agreed, these procedures would be identical to those of NDFC. Moreover, in view of the fact that the Fund could be established as an autonomous finance institution, its procedures would be established to allow for its detachment from NDFC at a later date, should that decision be made. NDFC has extensive experience in financing large industrial subprojects and the corporation's procedures are satisfactory to the Bank. However, in view of the corporation's limited experience in appraisal, financing and supervision of capital intensive energy projects, as well as the varying procurement/disbursement requirements of the Fund's cofinanciers, NDFC's existing guidelines and procedures for appraisal and supervision would require adaptation for energy subprojects. In order to carry out this task, NDFC would require about 30 manmonths of consultants assistance. Consultants have already been recruited under ODA financing. The furnishing for approval, to the Bank, of the guidelines for the operation of the Fund, including guidelines for appraisal, approval and supervision of subprojects will be a condition of loan effectiveness (para 5.03(e)).

C. Operations of the Private Sector Energy Development Fund

Sources of Financing for the Fund

2.19 The Fund would be financed through loans and grants made to GOP amounting to US$520 million, of which the Bank would provide a loan of US$146 million. The remaining US$374 million would be in the form of loans from JEXIM (US$150 million), ODA (US$49 million) and the Italian Government (US$50 million); and a grant from USAID (US$125 million). All loans and grants made by the Bank and bilateral agencies to finance the Fund, i.e., Italy, USAID, JEXIM, Germany, etc., would be guaranteed by the Government. The Fund would provide subloans to cover up to 30% of the total cost of PS subproject approved by GOP and NDFC. A summary of the terms and conditions for financing the Fund is presented in Table 2.3.

Table 2.3:
Terms and Conditions for Financing the Fund

Source	Amount US$ million	Weight	Interest Rate (%)	Exchange Rate Insurance Premium (%)	Overall Interest Rate (%)
Loans					
Bank	146	0.26	7.72	3.25	10.97
JEXIM[b]	150	0.27	5.30	7.00	12.30
ODA	54	0.10	5.50	3.00	8.00
Italy	50	0.09	1.50	3.00	4.50
Canada	30	-	5.20	3.25	8.45
Grants					
USAID	125	0.23	-	-	-
Total	555	1.00			7.85[a]

[a] Weighted average.
[b] The loan amount is tentative.

Commitments for financing the Fund have been given by USAID, ODA, Italy and Canada. The Export-Import Bank of Japan is also considering cofinancing the Fund. The Governments of Germany and France have expressed their interest in cofinancing the Fund. ADB has also been requested by GOP to participate in cofinancing the Fund and it is presently assessing its position. GOP prefers that the financing of the Fund be finalized as early as possible. However, delays in internal clearances and reviews of official assistance programs could delay the completion of the financing package. Consequently, the financing of the Fund has been structured after taking the views of all potential cofinanciers into consideration to allow for their participation in the future. The procedures for the coordination among cofinanciers would be detailed in a Cofinanciers' Memorandum of Understanding (CMU) to be finalized between the Bank, GOP and the cofinanciers. CMU would outline the processes involved in the approval of the decision of NDFC for financing subprojects, clearance of bidding documents, and approval of award recommendations, reporting format, and annual audit arrangements. At present, however, there is a need, for a critical level of resources to be available in the Fund by the time the first few subprojects are ready to be appraised for possible financing. Based on the proposals approved and those under review, it is estimated that at least US$300 million should be available by September 1988, when requests for financing of subprojects are expected to be received by the Fund. In order to ensure the timely implementation of the proposed Project, GOP reviewed with the Bank, during negotiations, the status of commitments by the cofinanciers. Fulfillment of all conditions precedent to effectiveness of the Cofinancing Agreements providing for cofinancing funds in an aggregate amount equivalent to about US$150 million, in addition to the proposed Bank loan, will be a condition of loan effectiveness (para 5.03(f)).

Onlending Interest Rate

2.20 The Fund's onlending interest rate for the subprojects would be 14%, which is equal to the prevailing rate on foreign loans to industrial enterprises and GOP's loans to most energy sector entities, i.e. OGDC, SNGPL, etc. The onlending interest rate would cover: cost of borrowing, and cost of operations, and allow for the accumulation of reserves. Cost of Borrowing: Table 2.3 shows contributions in US dollar equivalent from various sources to the Fund with their respective interest rates. In order to arrive at the Fund's cost of borrowing in rupees, the exchange rate insurance scheme offered by State Bank of Pakistan to both public and private sector entities is used. The essential feature of the scheme, applicable particularly to long-term foreign borrowings, is that for the payment of an insurance premium, the State Bank of Pakistan would freeze the rupee to the currency exchange rate prevailing at the time of opening letters of credit to utilize the loan funds. The insurance premiums, which are different for different currencies, are fixed for the life of the loan, and are applicable to the outstanding amounts of the loan insured. On May 1, 1988, the premiums on the currencies expected to flow into the Fund were 3.25% for US Dollar, 3.25% for Canadian dollar, 3.0% for Pounds Sterling, 7.0% for Japanese Yen and 3.0% for Italian Lira. Accordingly, the weighted average interest rate to be paid by the Fund is about 8.0%. Cost of Operations: The onlending rate would recover the cost of operating and administering the funds, expected to be up to 0.5% of the disbursed amount. This would cover costs such as personnel and administration, auditing, reporting, loan documentation, and supervision of subproject implementation. Spread to Accumulate Reserves: The onlending interest rate would result in a spread of approximately 5.5%, which would assist in the accumulation of reserves that could then form the equity capital for the Fund (para 2.23).

2.21 The onlending rate of interest for each subloan would be fixed. In view of the fact that expected inflation is about 6% for the Seventh Plan period, the 14% onlending rate would result in a positive real interest rate. Moreover, taking into account the cost of resources to the Fund (para 2.20) and the fee to be paid to NDFC, the interest rate spread is positive. If the onlending rate is to remain positive, mobilize resources for both the Fund and the Government, and maintain parity with the rates for commercial loans, the level of the onlending rate should be reviewed periodically to ensure compliance with these conditions. Therefore, GOP agreed, during negotiations, to review with the Bank by April 30 of each year beginning with 1989, the Fund's onlending interest rate for new loans, with a view to ensuring that the rate remains positive in real terms and, when appropriate, revise the interest rate starting July 1st of the same year (para 5.01(d)).

Repayment Terms for Onlending

2.22 The repayment period for onlending the Fund's resources, including the resources received from the Bank, to subprojects would be up to 23 years. This repayment period corresponds with the economic life of energy subprojects, thus alleviating one of the constraints to increased involvement of PS in energy development. The subloans made by the Fund would have a grace period of up to eight years in order to facilitate completion of construction of long gestation projects, e.g., hydroelectric projects, and the repayment of export credits and commercial loans which normally would have repayment periods of eight years, including grace. If the proposed grace and repayment periods for subloans from the Fund are shortened, a peaking in amortization in the first few years would occur, necessitating exceptionally high tariffs that could render the subprojects financially unattractive.

Forecast of Sources and Applications of Funds

2.23 The Fund's forecast sources and application of funds statements for the period FY89-FY98 are presented in Annex 2.6 and summarized in Table 2.4.

Table 2.4:
Summary Forecast of Sources and Applications of Funds (FY89-FY98)

Sources	US$ Million	Rs Million	%
Interest Income	521.0	9,118	47
Repayment Received	13.1	229	1
	534.1	9,347	48
Capital Raised	555.0	9,712	50
Other Income			
Commitment Fee	6.1	106	1
Appraisal Fee	14.4	252	1
Total Sources	1,109.6	19,417	100
Applications			
Disbursements	555.0	9,712	50
Debt Service	239.9	4,197	21
Operating Expenses	19.9	348	2
Equity Reserves	294.8	5,159	27
	1,109.6	19,417	100

The forecast interest income of the Fund amounts to US$521 million over the ten-year period (FY89-98). Capital raised amounting to US$555 million, represents the withdrawal from loans and grants financing the Fund. Additional income, through appraisal fees, amounting to just over US$14 million, and commitment fees on undisbursed subloans, amounting to just over US$6 million, would be generated. These two sources of revenue would allow the Fund to cover the cost of consulting services required for the appraisal, and supervision of implementation of PS subprojects. As regards the uses of funds, debt service, which includes interest and repayment on each of the loan currencies flowing into the Fund (para 2.19) would amount to about US$240 million over the ten-year period. Operating expenses would amount to about US$20 million. This results in accumulated net income to the Fund of about US$295 million over the ten-year period accumulated at an average of about US$25 million a year in the Seventh Plan and US$34 million a year in the Eighth Plan. If the study to assess the merit of detaching the Fund from NDFC (para 2.16) does recommend its detachment from NDFC and setting it as an autonomous financial institution, the accumulated reserves could form the equity capital of the Fund without depending upon allocation from GOP's budget. Assuming a 5:1 debt:equity ratio, which is conservative relative to 7:1 ratio allowed for NDFC, this equity would enable the Fund to mobilize an additional US$250 million each year to finance energy projects in the Eighth Plan.

Appraisal and Supervision of Subprojects

2.24 Approval of the subproject by GOP involves its signing a Letter of Intent (LOI) with a prospective investor, and implies a commitment in principle only. It would not guarantee financing by the Fund. Financing of

subprojects by the Fund would only materialize when subprojects are appraised and found to be technically, economically and financially viable. Each investor would be required to submit a feasibility study carried out in accordance with guidelines approved by the Bank which would form the basis of appraisal by the Fund. The study would cover project design, engineering, cost estimates, implementation arrangements, specifications of equipment and goods, financing plan, prices, financial projections, draft agreements for supply of fuels, services and sale of output, environmental impact assessment, resettlement plans, etc and all elements of SP. The Fund would be assisted by engineering consultants and financial advisory firms in the appraisal of subprojects. The engineering consultants would inter alia review: (i) suitability of site; (ii) availability of inputs; (iii) appropriateness of, and proven experience with technology offered; (iv) project design; (v) arrangements of detailed engineering; (vi) construction strategy; (vii) cost estimates; (viii) procurement arrangements; (ix) arrangements for project operation and maintenance; and (x) compliance with Bank's environmental guidelines and resettlement requirements, and submit a comprehensive assessment of the technical feasibility of the subproject. The financial advisors would review: (i) adequacy of financing package; (ii) financial viability of the project over its life under various tariff scenarios; (iii) SP; and (iv) corporate structure. Based on the consultants' report, the Fund would prepare comprehensive appraisal report including its own recommendations. In order to ensure that the subprojects meet the cofinanciers' requirements regarding quality and viability, the Fund's recommendations would be sent to the Bank for review on behalf of the cofinanciers. To ensure that subprojects supported by the Fund are technically and financially viable, during negotiations, NDFC agreed that all loans to subprojects costing more than US$30 million would be subject to prior review and approval by the Bank (para 5.02(a)).

2.25 As the Fund is expected to deal with a relatively small but diverse subprojects, it is not practical to maintain the necessary professional staff for appraisal and supervision of subprojects. The in-house staff in the Fund would, therefore, be essentially limited to the core staff required for the appraisal, supervision and financing operations. The Fund would need to draw upon specialized consultancy firms for support in technical aspects of appraisal and supervision of the subprojects. Similarly, it would require the support of financial advisors to assist in the specialized review of the financing plans and SP. Consultancy services for this work are estimated at about 150 manmonths. In order to ensure that appraisal and supervision of subprojects is carried out to standards acceptable to the Bank and the cofinanciers, appointment of technical consultants and financial firms, under terms and conditions satisfactory to the Bank, to assist the Fund in appraisal and supervision of subprojects will be a condition of loan effectiveness (para 5.03(g)).

Procurement

2.26 The procurement of equipment, materials and services financed by the Bank would be in accordance with the Bank guidelines. The investors would be able to utilize tied funds available from a country's donor agency by following the procurement procedures acceptable to that agency. Financing from ODA and Italian Aid agency would be available for procurement from their respective countries. USAID funds would finance procurement from US and Pakistan. JEXIM's loan to the Fund would be untied with procurement of goods and services in accordance with the Bank's guidelines. In the event

that the lowest evaluated bidder under ICB is from one of the countries offering tied aid, the contract, to the extent of available financing, would be financed by the tied aid provided by that agency to the Fund, supplemented by the funds provided by the Bank and JEXIM. GOP has requested the Bank to coordinate all procurement under Bank guidelines. The Fund would send bidding documents and evaluation reports for equipment and services to the Bank for review. The procurement arrangements and the compensation by the cofinanciers for the cost incurred by the Bank in the coordination of procurement under the proposed Project would be specified in CMU (para 2.19).

2.27 The proposed loan would finance equipment, materials, services and costs of consultants and training. Contracts financed under the proposed loan for supply and erection of equipment would be awarded through International Competitive Bidding (ICB). Investors would also be permitted to use Limited International Bidding (LIB) for procurement of equipments having only limited number of suppliers. The list of equipments to be procured through LIB would be approved by the Bank before the initiation of procurement. In the event the investors procure equipment and services using LIB, they will be required to seek bids from a list of potential suppliers broad enough to ensure competitive prices. As the Fund is expected to finance large and complex contracts, and in order to minimize the time required for procurement using ICB, the investors would have the option to prequalify, prospective bidders for equipment supply and erection contracts, prior to appraisal of the subprojects. Investors would be required to advertise the procurement in local and international press, and to notify trade representatives of Bank group member countries and Switzerland. Bidding documents and award recommendations for contracts valued at more than US$2.5 million would require prior review by the Bank. Consultants would be selected according to guidelines of the respective cofinancing agencies financing the services. Consultants financed from the proceeds of the Bank loan would be selected according to Bank guidelines.

Disbursements

2.28 The proceeds of the proposed Bank loan would be disbursed against (a) 100% of the cif (ex-works if manufactured locally) cost of equipment and materials and 100% of foreign expenditure for erection, both being subject to ICB; and (c) 100% of cost of consultants. The percentage of Bank financing would need to be modified for the contracts which are jointly financed by the Bank and cofinanciers following procurement guidelines compatible with those of the Bank, i.e. JEXIM, ADB, etc. Disbursements would be fully documented, except for payments not exceeding US$0.5 million. Such disbursements would be made against statement of expenditures, the documentation for which would not be submitted to the Bank but retained for inspection by the supervision mission. The standard procedures for auditing SOE would apply. In order to facilitate disbursements, a special account would be established in a commercial Bank, in accordance with terms and conditions satisfactory to the Bank. The initial deposit in the Special Account would be US$5 million. A schedule of disbursements is presented in Annex 2.7. The disbursement schedule covers a six-year period. As the proposed Project is first of its type, there is no standard profile for such projects. The estimated disbursement profile takes into consideration identified subproject and the expected composition of the portfolio to be financed from the proposed loan. The loan closing date would be December 31, 1994.

2.29 The disbursements of cofinanciers' funds would be in accordance with their respective guidelines. In case the successful bidder is from a country

eligible for financing under the guidelines of the Bank, ADB and JEXIM, the contracts would be financed from all the agencies in proportion to their contribution to the Fund. Similarly , if the bidder is from a country which qualifies for financing from two agencies providing untied funds, the contract would be financed from the proceeds of the loans from these two agencies in proportion to their contribution to the Fund. These disbursement arrangements would be set out in CMU (para 2.19).

Environmental and Resettlement Aspects

2.30 The environment and resettlement guidelines for the subprojects, satisfactory to the Bank, would be outlined in a brochure issued by GOP (para 2.12). These guidelines should, inter alia, cover critical environmental factors to be reviewed and monitored, permissible pollutant levels, principal control methods, treatment and disposal of gaseous, liquid and solid wastes, occupational health and safety standards, planning standards for rehabilitation in the case of involuntary resettlement, and procedures for implementing and monitoring rehabilitation plans. Prior to the issue of LOI, GOP should, for projects which may have significant environmental and social impact, carry out a preliminary environmental/resettlement screening to assess the site and technology alternatives. The investors would be required to submit to the Fund as a part of the Feasibility Study, an environmental impact assessment for the subproject and, in the event of any dislocation of inhabitants, a plan for their resettlement. Both these documents would be submitted to the Bank along with the Fund's recommendations for the approval of loan to the subproject. In order to ensure that the subprojects comply with the Bank's environmental guidelines, GOP confirmed, during negotiations, that subprojects approved for loans by the Fund would include provisions requiring compliance with environmental guidelines and resettlement requirements, satisfactory to the Bank (para 5.01(e)).

Reporting, Accounts and Auditing

2.31 In order to streamline the process of satisfying the reporting requirements of various cofinanciers of the Fund, GOP has requested the Bank to formulate a common reporting package that would be furnished to all cofinanciers. Accordingly, in cooperation with the other cofinanciers, the Bank has recommended that the reporting package should comprise, as regards the Fund, a quarterly progress report on the Fund's operations including a statement on utilization of funds from each cofinancier, annual financial statements duly audited by an independent auditor acceptable to the Bank and a Project Completion Report within six months after the completion of the proposed Project. In addition, for each of the subprojects, the reporting package would include a quarterly progress report and annual audited financial statements. A Project Completion Report would be required following the completion of each subproject. In order to facilitate the Bank to monitor the implementation of the proposed Project, GOP agreed, during negotiations, to furnish to the Bank and the other cofinanciers of the Fund: (a) quarterly progress reports in a format satisfactory to the Bank; (b) annual financial statements audited by an independent auditor acceptable to the Bank, no later than six months after the end of each financial year; and (c) within six months of the completion of the proposed Project, a Project Completion Report in a format acceptable to the Bank (para 5.01(f)).

III. SECURITY PACKAGE

A. Introduction

3.01 Pakistan's economic growth over the decade has been accompanied by increased public sector outlays, financed increasingly through government borrowing. Domestic debt has been growing at over 20% annually since FY80, and external debt, at about 6.5% per year. Such extensive borrowing limits the access of PS to credit needed to achieve the development goals. Consequently, GOP has initiated a program under the Seventh Plan aimed at mobilizing resources and curtailing expenditures. On the revenue side, the tax base would be broadened and prices would be rationalized, and on the expenditure side, investments would be focussed on the priority sectors and a balance maintained between the level of development outlays and implementation capabilities of public enterprises. This strategy would result in a reduced share of public investments in key sectors and provide an opportunity for GOP to seek a greater role for PS in achieving the development objectives in these sectors of the economy. Consequently, in the energy sector, the achievement of the Seventh and Eighth Plan targets is now dependent on both the public sector performance and the ability of PS to mobilize the technical and financial resources needed for the timely implementation of investments. The Government has decided that PS would have complete freedom to identify investments within the broader framework of the development plans and take full responsibility for their preparation, finance, implementation, operations and, possibly, transfer at the end of their economic life. As stated above, this approach to project development is referred to as BOOT. GOP's objective in encouraging PS investments under BOOT schemes is to shift the burden of such investment onto PS. In other words, sovereign guarantees for loans assumed by PS would not be provided, thereby not increasing the Government's debt burden. Instead of sovereign guarantee, the Government would establish an institutional framework for the operation of PS and agree to a SP needed to provide the incentive for lenders and investors to consider limited recourse financing.

3.02 In accordance with GOP's request, the Bank assisted in the design and implementation of a framework for SP. This framework is not intended to be applicable to all PS subprojects, but to serve as a basis for the design of subproject specific SPs. In some cases, it might exceed what is required and in others, it would require strengthening. The framework of the SP involves four elements: (a) incentives to PS to undertake investments under BOOT schemes with limited recourse financing; (b) the eligibility criteria for PS investments to be considered by GOP and the Fund which would safeguard the interests of lenders, investors and the Government; (c) provisions to minimize the impact on lenders, investors and GOP of identified risks that could occur in the process of preparation, implementation and operation of PS subprojects; and (d) the Bank role in subproject formulation, appraisal and supervision.

B. Measures to Attract PS Investments

3.03 SP includes a set of measures, applicable to all PS investments in the energy sector to be financed by the Fund, which provide incentives to investors and outlines the commitments of GOP in maintaining these incentives. These measures are discussed in detail below:

(a) Price for the purchase of energy: GOP's objectives of agreeing to a price to be paid for energy produced by PS is to provide incentive to efficiently implement and operate subprojects; and is, therefore, not a cost plus mechanism. GOP would agree with investors on firm prices for energy, expressed in constant terms i.e., prices of the year during which negotiations take place. These prices would be structured based on a set of agreed assumptions regarding operating efficiency, level of output, and capital cost parameters. The prices would cover operating costs, debt service, and returns on equity. Adjustments in prices would only be made to accommodate changes in input prices such as labor, fuel, cost of spares etc. Adjustments would not be allowed to ensure specific rates of return on equity. In effect, returns on equity would be a residual, and would not be adjusted, except for exchange rate variation to maintain their value unaltered in real terms. If the assumptions and parameters used in the determination of prices are not maintained, the shareholders' returns could be adversely affected. Conversely, provided the venture were operated efficiently according to assumptions and parameters agreed in the LOI, it would earn the minimum return, which could be increased by greater efficiency of operation;

(b) Adjustment Indices: In order to compensate investors for changes in the prices of inputs which are beyond their control, indices would be agreed between GOP and the investors to reflect these changes. These could include changes in price of fuels, operation, maintenance, administration costs, and exchange rate movements, etc. The cost of debt financing is expected to be fixed by securing fixed interest rate funds, and the insurance of foreign exchange risk through the Government's existing forward foreign exchange scheme;

(c) Fiscal Incentives: GOP has reduced import duties and taxes on electrical and mining equipment to allow PS to offer prices for energy that are attractive. In addition, specific areas and localities have been declared industrial zones and are allowed income tax holidays of up to five years. However, in view of the fact that the laws could be altered, GOP has decided that the price for energy would be net of income tax. GOP would insulate the PS against changes in duties and taxes or other actions by the Government;

(d) Repatriation of Profits and Debt Service: Investors and lenders would require assurance that the foreign exchange necessary to pay dividends and service the foreign debt requirement would be available. While GOP is unwilling to contemplate a traditional sovereign guarantee of foreign debt, GOP has agreed that, given that the Rupees are made available, State Bank of Pakistan will undertake to make available the foreign exchange to meet foreign debt service obligations and pay dividends to foreign shareholders; and

(e) Price Reopeners: GOP has decided that price for purchase of energy from PS, indicated in the LOI, would be adjusted for future changes based on indices (para 3.03(a)). The only areas of uncertainty relate to impact of some aspects of costs which

are beyond the control of PS and lenders. These are civil works, impact of environmental safeguards, and unanticipated foreign exchange movements on project and financing costs. These would represent areas where price could be reopened. PS and GOP would negotiate a revised purchase price for energy after cost estimates for these items are firmed up.

In order to ensure that the incentives to PS are formalized, GOP agreed, during negotiations, that it would: (i) determine the price of energy produced by PS taking into account a reasonable real return on equity investment, net of income tax; (ii) permit repatriation of profits and debt service under arrangements with the State Bank of Pakistan; (iii) allow the revision of energy purchase prices in accordance with agreed indices to reflect changes in the prices of input and exchange rate movements; and (iv) allow price reopeners in areas where there are uncertainties which could include civil works, environment, and foreign exchange movement (para 5.01(g)).

C. Eligibility Criteria

3.04 The institutional framework for review, approval and financing PS subproject involves two sequential processes: the review of PS proposals by GOP and the issuance of an LOI, and the appraisal of subprojects by the Fund. Criteria are needed to determine whether PS investments are eligible for consideration first by GOP then by the Fund.The brochure to be issued by GOP would outline the policy framework, and the guidelines for the preparation, and the criteria for review and evaluation of PS proposals. The Fund would also issue guidelines outlining the procedures for appraisal and supervision of PS subprojects. All PS investments would be screened to ensure that they are consistent with national priorities.

Eligibility Criteria for Consideration of PS Proposals by GOP

3.05 The eligibility criteria for consideration of PS proposals by GOP are: (a) integrability; (b) competitiveness; and (c) viability.

(a) Integrability: Public and private sector investments should form an integral part of the national least cost development plans for the energy subsectors involved. These plans maximize the benefits to the economy by identifying projects, their technology, size and implementation schedules which would meet energy requirements and ensure that public and private investments are consistent. Least cost plan should be based on economic prices, which would eliminate distortion in the prevailing prices attributable to factors such as price and exchange rate controls, taxes, subsidies, etc.;

(b) Competitiveness: PS investments could be mobilized through: (i) a general announcement which provides parameters to be adhered to in the preparation of proposals, or (ii) proposal from PS investors solicited through a bidding process, to implement projects at identified sites, for which feasibility and environmental impact studies have already been prepared by the Government. PS subprojects should emerge through a competitive process. Competitiveness would be ensured under the two options by considering proposals that offer prices which, for electricity, would be less than the unit cost of

generation that WAPDA would have incurred, adjusted for financing available to PS; for coal, is equal to or less than the economic cost of supply (Long-Run Marginal Cost) expressed in terms of thermal equivalency; and for gas, the cif price of fuel oil, expressed in thermal equivalency; and

(c) Viability: PS proposals should be viable from the economic point of view. Their economic rate of return should exceed the financial rate of return, estimated between 15% and 20%, which is considered appropriate to attract foreign investors in the international market and correspond to the rates of return secured by PS in Pakistan at present. In addition, investors should be creditworthy to undertake the investments. To ensure commitment to subprojects, equity contribution of at least 25% would be required which would result in viable capital structure and an acceptable debt service coverage ratio.

(d) Limited Recourse Financing: PS investors should not require direct sovereign guarantee for suppliers' credits and commercial loans. Institutions providing these funds should be prepared to assume project specific risks. In the event of occurrence of these risk(s), the recourse of lenders would be limited to the provisions broadly outlined in SP.

In order to ensure that PS investments are dictated by national priorities, GOP agreed, during negotiations, that PS subprojects financed by the Fund: (i) would form a part of the national least cost investment plan; (ii) would be selected only if the price offered by PS (a) for electricity, is less than the unit cost of generation that WAPDA would have incurred, adjusted for financing terms available to PS, (b) for coal, is equal to or less than the economic cost of supply (Long-Run Marginal Cost) expressed in terms of thermal equivalency; and (c) for gas, is below the cif price of fuel oil, expressed in thermal equivalency; and (iii) are technically, economically and financially viable (para 5.01(h)).

Criteria for Consideration of Subprojects by the Fund

3.06 Although GOP's review of PS proposals would generally establish the technical, economic and financial viability of subprojects, such reviews would be undertaken without reference to any firm financing terms and conditions. Therefore, GOP's approval of proposals, evidenced by issuance of LOIs, is a necessary but not a sufficient condition for advancing loans from the Fund. The Fund would have its own guidelines for assessing the technical and financial viability of PS proposals. In order for subproject to be considered for loans from the Fund, they should meet the eligibility criteria outlined below:

(a) Corporate Structure: Subproject companies should be incorporated in Pakistan under the Companies Ordinance. In cases of joint venture with public sector agencies, at least 51% of the equity of the subproject company should be held by PS; and

(b) Subproject Planning and Implementation: Subproject companies should appoint: (i) Engineering Consultants with international experience to prepare detailed design, bidding documents, etc., and supervise implementation; (ii) Financial Advisors with

international experience to prepare the financing package and negotiate agreements to mobilize limited recourse financing; and (iii) Principal Contractors with adequate experience to take full responsibility for the implementation of subprojects. They should provide performance bonds, of at least 10% of the contract value and underscore their commitment to the subprojects by taking up to 5% of the equity; and

(c) Subproject Financing: Not less than 50% of the foreign exchange debt for the subproject shall be obtained from sources other than the Fund, i.e., foreign commercial loans and/or export credits.

In order to ensure that resources mobilized from PS are maximized and that PS subprojects are implemented to internationally acceptable standards, NDFC agreed, during negotiations, that all subprojects to be financed by the Fund: (i) would be undertaken by companies incorporated under Pakistan Companies Ordinance with at least 51% PS ownership; (ii) should be assisted by engineering consultants and financial advisors, satisfactory to the Bank, in the preparation and implementation of subproject; (iii) should engage principal contractors, satisfactory to the Bank, in the construction and commissioning of subprojects; and (iv) not less than 50% of the foreign debt requirements shall be obtained from sources other than the Fund (para 5.02(b)).

D. Agreements to Delineate Responsibilities of Lenders, Investors and GOP

3.07 GOP, investors, lenders and creditors would need to enter into a set of agreements which would define their mutual obligations and responsibilities during construction and operation of the subproject. The scope of these agreements is detailed below:

(a) Letter of Intent (LOI): LOI would be issued following review of proposal for investment in the energy sector and the acceptance by various government agencies of the major technical and financial parameters and economic viability of the proposed investment. The LOI would provide the sponsors the exclusive right to the project for a period to be stipulated and GOP's concurrence to initiate the feasibility studies, selection of contractors and sourcing of financing. LOI would include an energy purchase price with provision for reopeners, outline the incentives, and price adjustment mechanism. It will also commit the sponsors to complete the feasibility study within a stipulated period;

(b) Implementation Agreement (IA): IA would be signed between GOP and investors, following the acceptance of investors' feasibility studies and would supersede the LOI. IA would be operative over the expected life of subprojects and would define the investors' and GOP's obligations during implementation and operation of the subprojects. The investors' responsibilities would include financing, design, construction, operation and maintenance of subprojects to mutually agreed standards and parameters. GOP's obligation would include approvals to establish and operate subproject, permission for foreign private investments and remittance of foreign exchange, underwriting of energy purchase obligations

and risks borne by GOP, etc. IA would also define the terms and conditions under which the subproject could be transferred to the Government;

(c) Energy Purchase Agreement: EPA would be signed between the subproject companies and the energy purchasing entities, whose obligations thereunder would be guaranteed by GOP. It would define the purchase price of the output, the mechanism for annual adjustments based on indices to be agreed. It would also specify performance standards, level of guaranteed output which the energy purchasing entity would buy and the subproject companies would be obligated to deliver, performance linked rewards and penalties, arrangements and frequency of payments. The arrangements for resolution of disputes regarding purchase price and operation of the contract would also be defined;

(d) Construction Agreement: The Construction Agreement would be signed between the subproject companies and principal contractor responsible for construction and commissioning of subproject. The Construction Agreement would define the scope, sources of supply, contract value, implementation schedule, construction standards, penalty and bonus provisions linked with performance. The arrangements for the resolution of disputes, price adjustments, if any, would also be defined in the agreement. The principal contractor would be required to submit a performance guarantee to the subproject company which may be expected to assign the benefits of such guarantees to the lenders;

(e) Operation and Maintenance Agreement: In the event that the subproject companies are not the subproject operators, they would be required to sign agreements with entities which would be responsible for operation and maintenance (O & M) of subproject according to performance standards outlined in IA and EPA. These agreements would outline the role and responsibilities of the operator vis-a-vis the subproject company. In order to ensure that the operations and maintenance contractor is capable of fulfilling his responsibilities, GOP would approve the O & M contractor;

(f) Fuel Supply Agreement: In the case of thermal power plants, the subproject companies and the fuel supplier would be required to enter into a long-term agreement for supply of fuel. The agreement would stipulate the quality, quantity and frequency of fuel supply, and penalties for inadequate performance. The performance of the fuel supplier under the terms of the fuel supply agreement would be guaranteed by the Government; and

(g) Other Agreements: SP, in addition to the above, would also include Shareholders' Agreement, Loan Agreements, and Escrow Agreements, whose scope and content would depend upon the size and type of the subprojects.

In order to clearly set out the mutual rights and obligations of GOP, the investors, lenders and creditors for subprojects to be financed by the Fund, GOP agreed, during negotiations, to (i) issue a Letter of Intent to

the sponsors and thereafter execute an Implementation Agreement with the subproject company; and (ii) cause the subproject company to enter into an Energy Purchase Agreement, Fuel Supply Agreement, Construction Agreement, Operation and Maintenance Agreement, and any other agreement required for the implementation and operation of the subproject (para 5.01(i)). GOP also agreed to guarantee the Energy Purchase Agreement and the Fuel Supply Agreement and ensure that the above agreements are satisfactory to the Bank (para 5.01(j)).

E. Provisions to Minimize the Risks of Limited Recourse Financing

3.08 Implementation. The principal source of risk during the implementation stage is delay in project completion. Delays in subproject completion would involve: risk to the lenders in that their debt would not be serviced; risk to the investors by foregoing the return; and risk to the Government in that the supply of energy would not materialize. Delays in subproject implementation could take place because of:

(a) Force Majeure: In the case of delay in subproject completion or suspension of operation from causes beyond the control of the subproject company, the investors would only be protected to the extent of the insurance coverage obtained by the subproject companies and, on a case-to-case basis, agree to assume the risk. The Government would provide financing through the Fund to complete the subprojects, provided that its completion remains technically and financially viable, and covers debt servicing to the lenders and thereby ensure continued debt servicing. GOP agreed, during negotiations, to extend, in the event of delay in completion of construction or suspension of operation on account of causes beyond the control of subproject company, loans from the Fund on terms and conditions, satisfactory to the Bank, to the subprojects companies to meet their debt service obligations without affecting the provisions agreed under the IA and EPA; (para 5.01(k)); and

(b) Failure by the Principal Contractor: In the cases of delay attributable to failure of principal contractors or any subcontractor, the Company would have recourse to the principal contractors' performance guarantee. If this is not adequate to cover debt service, the Company may need to seek a rescheduling by the lenders. In case of protracted delay in implementation, the lender may be expected to have a first call on the turnkey contractor's performance guarantee and ultimately would have recourse to the project assets. In addition, the Government would be compensated for the loss of energy by exercising their right to encash the performance guarantee given by the subproject companies. GOP agreed, during negotiations, to require all PS investors in subprojects, to be financed by the Fund to: (i) if required, assign to the lenders/creditors the performance guarantee furnished to PS subproject company by the main contractor responsible for implementation of the subproject to which such lenders and creditors could have recourse in the event of delay in the implementation of the subproject; and (ii) provide for the PS subprojects' lenders and creditors to have recourse to the project assets (para 5.01(l)).

3.09 Operations. Once the subprojects are completed, the principal source of risk involves the loss of revenue on account of the following two reasons:

(a) Performance Shortfall: Shortfall in performance could be either on account of less than guaranteed offtake by the purchasers, or failure by the O & M contractor to perform. In the first case, there would be no shortfall in revenue as the subproject would be fully compensated under the take-or-pay arrangements in the EPA. The performance guarantee provided by the operating companies may be assigned to the lenders. In case of shortfall on account of failure in performance of the O & M contractor, there may be inadequate revenue to meet debt service and, thereafter, other obligations. To provide lenders with a cushion, an escrow account would be maintained (para 3.10(b)). GOP agreed, during negotiations, to require PS subprojects financed by the Fund, to assign to their lenders/creditors the performance guarantee furnished to the subproject companies by the operator, to which such lenders/creditors will have recourse, in the event of shortfall in the performance (para 5.01(m)); and

(b) Default by the Energy Purchasing Entity: Under the institutional arrangement proposed by GOP for the operation of PS, the energy purchasing entities are expected to be partly or wholly owned by the Government. Where the purchasing entity is a government-controlled body, the Government would be the guarantor of the energy purchasing agreements (para 3.07).

3.10 Additional Provisions. In addition to the above provisions, there is a need for additional provisions to cover cost overruns and to establish a Debt Service Reserve Escrow Account which would enhance SP to provide incentives for lenders and investors to consider limited recourse financing.

(a) Failure by Contractors: In order to provide for contingencies arising during project construction, a standby facility would be arranged. Similarly, the investors could also be required to provide an undertaking to furnish additional equity to finance cost overruns. The additional financing would be capitalized based on the arrangements agreed in IA, i.e. provisions regarding cost escalations. The Fund would earmark a portion of its resources to support the standby facility. The subproject companies would be required to pay a commitment charge for the standby facility. The modalities of utilization and servicing the facility would be detailed in the procedures for the Fund to be prepared by the consultants. GOP agreed, during negotiations, to provide up to 75% of the additional financing needs arising from an increase in the agreed project costs, through loans from the Fund, subject to at least 25% of the additional financing being funded by investors equity and without affecting the provisions agreed under the IA and EPA (para 5.01(n)); and

(b) Debt Service Reserve Escrow Account: As part of the security to the lenders, a Debt Service Reserve Escrow Account, holding the ensuing six months' debt service requirement, would be

established by the subproject companies to coincide with the commissioning of the subproject. If the escrow account is depleted, the subproject companies would be required to replenish the escrow account from future earnings. GOP agreed, during negotiations, to cause the subproject companies to establish at the time of the commissioning of PS subprojects a debt service escrow account which would at all times hold sufficient funds to meet six months debt service requirements (para 5.02(o)); and

(c) Debt Seniority: The Fund would be created in order to provide financing for PS subprojects that would serve as a catalyst in attracting investors equity and commercial loans. The terms for lending from the Fund call for an eight-year grace period, which has been set long enough to allow for the repayment of most of the commercial loans and suppliers credits. This implies that commercial loans would be senior in repayment to the loans provided by the Fund. The Fund would however, be pari passu with commercial lenders in liquidation. In order to formalize this arrangement and provide comfort to the lenders, GOP agreed, during negotiations, to enter into arrangements under which the commercial loans and/or export credits obtained for the purposes of the subproject company shall have priority over the financing obtained from the Fund for such purposes in the allocation and distribution of funds available with the subproject company for repayment (para 5.01(p)). Export credits and commercial loans will be treated pari passu.

F. The Role of the Bank Group

The Bank

3.11 The Bank's involvement in the formulation of the SP as well as the implementation of its provisions would provide comfort to the lenders and investors in considering limited recourse financing. The role of the Bank follows the cycle of project development from inception to operation. The functions through each stage is discussed in detail below.

(a) Framework for the operation of PS: The Bank has taken the lead in the formulation of the institutional framework for the solicitation, review and approval of PS proposals by the Government, and the appraisal and finance of subprojects, and the supervision of their implementation. The framework would involve the strengthening of existing institutions through the appointment of qualified staff, their training and their support by internationally experienced consultants. The creation and staffing of the Fund and its design as a self-contained institution capable of appraising subprojects and monitoring their implementation, supported by retained long-term engineering and financial consultants with international experience. The Bank would monitor the process of review of proposals prior to the submission of recommendations to the ECC and the issuance of LOI. This would be undertaken through the process of supervision for the duration of the project implementation expected to be about six years.

(b) Appraisal and Finance of Subproject by the Fund: The Fund would be created and staffed in a manner satisfactory to the Bank. The guidelines for the operation of the Fund would be prepared by consultants acceptable to the Bank. The timetable for the implementation of the procedures for the appraisal and finance of subprojects would be monitored by the Bank. Moreover, the long-term consultants to assist the Fund in the appraisal and the supervision of projects would be appointed in accordance with terms and conditions satisfactory to the Bank. Prior to the approval of subprojects for financing by the Fund the Bank would review the appraisal report and the basis on which a decision was made by the Fund to assist a subproject.

(c) Supervision of Subproject Implementation: The consultants appointed to assist the Fund in the supervision of subproject implementation would provide a quarterly report of their findings and recommendations to the Bank. In the course of its supervision of the proposed Project, Bank staff would review the operations of the Fund and the status of project implementation, including disbursement, procurement, etc.

3.12 The Bank, in accordance with CMU, would coordinate all of the activities relating to the supervision of the implementation of the proposed Project, including the status of approval of proposals by GOP, appraisal of PS projects, and their implementation. The modalities for reporting and clearances would be defined in CMU. The cost of undertaking this work would be supported through resources provided by the cofinanciers.

3.13 IFC has worked closely with the Bank team in the overall appraisal and design of the proposed fund and stands ready to assist, on a case-by-case basis, individual subprojects as both a financial advisor and an at risk investor. Indeed, IFC is already closely involved with several of the more advanced subprojects summarized in para 2.08 and has met with many other potential sponsor groups. IFC, with its wide experience of successful investments in LDC private sector enterprises and the knowledge of what is required to make ventures of this size and type commercially attractive to equity investors and lenders, has three potential roles:

(a) Financial/Commercial Advisor: The negotiation of a bankable implementation agreement, power purchase agreement, turnkey construction contract and operating/maintenance contract are essential prerequisites to investors' confidence. While some project sponsors have already retained financial advisors, IFC stands ready, where desired, to assist sponsors in the negotiation of these essential contracts. With its special relationship with GOP, its commercial/financial expertise and its ability to be an at risk investor, IFC is uniquely placed to play an essential role in negotiating an equitable and commercially sound project package which can attract the necessary risk and debt finance. Given the large investment in time to ensure subprojects of the magnitude envisaged are bankable, IFC would need to be compensated in its role as a financial advisor. Such compensation would be negotiated with individual subproject sponsors on a case-by-case basis.

(b) Equity Investor: IFC has indicated its willingness to consider equity investments in the subprojects expected to benefit from the Fund.

(c) Debt Finance: Equity, together with funds available from the Fund, are expected to account for 55% of individual subproject cost, leaving 45% to be debt funded on a project risk basis. In cases where IFC is desired as a financial advisor, IFC would be prepared to work with the subproject sponsors to approach international lenders and export credit agencies for financing without a government guarantee. In order to marshall the very large local debt finance requirement associated with this program, IFC would also be prepared to work on behalf of the sponsors with the local DFIs and local branches of foreign banks to raise the Rupee finance. Additionally, IFC would be willing to consider loans for its own account and arrange, through international syndication, foreign commercial loans.

IV. PROJECT JUSTIFICATION

A. Rationale for Bank Involvement

4.01 The Bank has played a major role in assisting GOP to create an institutional framework which will facilitate the participation of PS in energy development on a hitherto unprecedented scale. PS participation on the scale envisaged could not have been contemplated without such a framework, which resulted from the Bank's strong catalytic role in bringing together the investors/lenders, suppliers, cofinanciers, and GOP. In particular, the creation of a Fund within NDFC would not only serve as a vehicle for mobilizing resources from bilateral cofinanciers and the Bank, but for channeling funds to viable enterprises on a basis which will generate resources from the PS (equity, foreign commercial loans, suppliers' credits) on a scale which will substantially exceed the Fund's own contribution.

4.02 While the institutional framework noted above serves as a good foundation for the proposed Project, there is a continuing role for the Bank during its implementation. All cofinanciers will rely, wholly or in part, on the Bank in ensuring that the preparation of guidelines for PS participation, the recruitment and appointment of consultants, the selection of subprojects, the adoption of appropriate safeguards with regard to environmental and settlement matters would not only meet high technical standards but would be fully consistent with the Bank's guidelines. Moreover, the Bank would coordinate on behalf of all the cofinanciers the requirements concerning procurement, disbursements and reporting.

B. Benefits

4.03 The proposed Project would assist GOP in attracting the participation of PS in the development of energy. It would facilitate the achievement of the objectives of the Seventh Plan, and create the framework and procedures during the Seventh Plan that could lead to an even bigger PS participation during the Eighth Plan. By introducing fluidized bed combustion technology for using low-quality domestic coal in power generation and state-of-the-art coal mining and oil/gas production techniques, the proposed Project would assist in overcoming the technological barriers to energy development currently being experienced by the public sector agencies.

4.04 The proposed Project would also introduce the concept of limited recourse financing in Pakistan which could be applied to other sectors,

particularly industry and transport. The Fund to be created under the proposed Project would mobilize resources for the future development of the energy sector by recycling the revenues attributable to the interest rate spreads. These funds could be leveraged to mobilize additional resources for financing future PS energy subprojects through the Fund, if the proposed study for assessing the future structure for the Fund recommends its evolution into a separate energy development finance institution.

C. Risks

4.05 One of the risks associated with the proposed Project relates to the fact that the pipeline of subprojects may not be built up to fully utilize the loans and grants made to GOP to finance the Fund. The subprojects for which letters of intent have already been issued, namely, Hawker Siddeley and Habibullah/Siemens, whose total amount to US$1,000 million, representing 50% of the overall cost of the proposed Project would utilize about US$300 million from the Fund. Moreover, considering the very detailed preparation of the Pyropower, INTRAG and Hub Chowki subprojects, which have been submitted to GOP for approval, another US$115 million could be committed to these. There are other proposals under preparation whose total cost is estimated to amount to US$600 million, and which would be seeking approximately US$200 in loans from the Fund. As a result, approximately US$415 of the Fund's resources of US$520 million are likely to be utilized. The above subproject pipeline has been built up prior to the establishment of the Fund, and a further subproject pipeline is expected to be built up after the Fund's establishment.

4.06. The subprojects, presently being considered by GOP (para 2.08), are expected to require a total of about US$700 million equivalent in local financing. This would amount to about US$130 million per year during the first three years, tapering down to US$100 million equivalent per year during the remaining three years of the implementation period for the proposed Project. A second risk is that the projected participation by the local financial institutions, other than the Fund, may not be sufficient to mobilize the very large amounts of local financing involved in view of the credit limits set by GOP. Alternatively, the project-related investments may pre-empt a large share of the investible local resources that the non-energy sectors might become severely constrained. In anticipation of these possibilities, GOP has allowed for expansion in the credit under the Seventh Plan to accommodate the incremental financing needs of PS subprojects in energy. Moreover, in order to guard against overburdening the financing capabilities of the Pakistani institutions, PS investors are required to provide an undertaking that gaps in local financing would, if necessary, be covered by funds from outside Pakistan to ensure timely implementation of subprojects. At a later date to be decided by the financial advisors of the investors, the Fund and NDFC, the foreign financing of local funds could be replaced with loans or equity from Pakistani financial institutions. These measures would minimize the risk of non-availability of funds to finance local costs of subprojects.

4.07 A third risk associated with the project pertains to the possible failure of PS companies to generate the revenue required to cover their financial commitments. Revenue generation is a function of the agreed price and the quantity to be delivered to energy purchasing agencies. The price for sale of energy is stipulated in EPAs, which are structured to cover operating costs, debt service and provide returns. Automatic adjustment mechanisms would be introduced in these agreements to ensure that investors are compensated for changes in the costs of their inputs, including the erosion in the value of

the rupee relative to foreign currencies. Energy sales by PS enterprises would be carried out under a letter of credit to ensure that payments would be made in a timely fashion. As for the willingness of agencies to purchase the quantities stipulated in EPAs, the likelihood of a failure in compliance with this agreement is fairly minimal in that the investment undertaken by PS are complements rather than substitutes for public sector investments, and also that there is a substantial unsatisfied demand for energy. In addition, the EPAs are designed to allow for a delivery of specified quantities of energy for which GOP would guarantee purchase irrespective of whether the energy is taken or not under a take-or-pay arrangement. These provisions would minimize the possibility that the revenues associated with the operation of PS subprojects would not materialize.

V. SUMMARY OF AGREEMENTS AND RECOMMENDATIONS

5.01 During negotiations, GOP agreed to:

(a) appoint, no later than December 31, 1988, consultants, under terms and conditions satisfactory to the Bank, to assist PPC and CMC in the review and evaluation of private sector proposals, negotiation of Implementation Agreements and other agreements under the Security Package, and training of their staff (para 2.13);

(b) cause WAPDA to appoint, by December 31, 1988, consultants under terms and conditions satisfactory to the Bank, to assist and train the WPPC staff in reviewing, negotiating and administering all aspects of Power Purchase Agreements (para 2.15);

(c) recruit, by October 31, 1989, consultants whose qualifications, experience and terms of reference are satisfactory to the Bank to undertake a study to assess the merit of establishing the Fund as an autonomous finance institution; and to review, with the Bank, by March 31, 1990, the recommendations of the study and agree on a timetable for the implementation of the agreed recommendations (para 2.16);

(d) review with the Bank, by April 30 of each year, beginning with 1989, the Fund's onlending interest rate for new loans, with a view to ensuring that the rate remains positive in real terms and, when appropriate, revise the interest rate starting July 1st of the same year (para 2.21);

(e) confirm that subprojects approved for loans by the Fund would include provisions requiring compliance with environmental guidelines and resettlement requirements, satisfactory to the Bank (para 2.30); and

(f) furnish to the Bank and the other cofinanciers of the Fund (i) quarterly progress reports in a format satisfactory to the Bank; (ii) annual financial statements audited by an independent auditor acceptable to the Bank, no later than six months after the end of each financial year; and (iii) within six months of the completion of the proposed Project, a Project Completion Report in a format acceptable to the Bank (para 2.31).

(g) (i) determine the price of energy produced by PS, taking into account a reasonable real return on equity investment, net of income tax; (ii) permit repatriation of profits and debt service under arrangements with the State Bank of Pakistan; (iii) allow the revision of energy purchase prices in accordance with agreed indices to reflect changes in the prices of input and exchange rate movements; and (iv) allow price reopeners in areas where there are uncertainties which would include civil works, environment, and foreign exchange movement (para 3.03);

(h) ensure that PS subprojects financed by the Fund: (i) would form a part of the national least cost investment plan; (ii) would be selected only if the price offered by PS (a) for electricity, is less than the unit cost of generation that WAPDA would have incurred adjusted for financing terms available to PS, (b) for coal, is equal to or less than the economic cost of supply (Long-Run Marginal Cost) expressed in terms of thermal equivalency, and (c) for gas, is below the cif price of fuel oil expressed in thermal equivalence; and (iii) are technically, economically and financially viable (para 3.05);

(i) (i) issue a Letter of Intent to the sponsors and thereafter execute an Implementation Agreement with the subproject company; and (ii) cause the subproject company to enter into an Energy Purchase Agreement, Fuel Supply Agreement, Construction Agreement, Operations Agreement, and any other agreement required for the implementation and operation of the subproject (para 3.07);

(j) guarantee the Energy Purchase Agreement and the Fuel Supply Agreement and ensure that the above agreements are satisfactory to the Bank (para 3.07);

(k) extend, in the event of delay in completion of construction or suspension of operation on account of causes beyond the control of subproject company, loans from the Fund on terms and conditions, satisfactory to the Bank, to the subproject companies to meet their debt service obligations without affecting the provisions agreed under IA and EPA (para 3.08(a));

(l) require all PS investors in subprojects, to be financed by the Fund to: (i) if required, assign to their lenders/creditors the performance guarantee furnished to PS subproject company by the main contractor responsible for implementation of the subproject to which such lenders and creditors would have recourse in the event of delay in the implementation of the subproject; and (ii) provide for the PS subproject's lenders and creditors to have recourse to the project assets, in the event of delay in the implementation of the subproject (para 3.08(b));

(m) require PS subprojects financed by the Fund, to assign to their lenders/creditors the performance guarantee furnished to the subproject companies by the operator, to which such lenders/creditors will have recourse in the event of short fall in the performance (para 3.09(a));

(n) provide up to 75% of the additional financing needs arising from an increase in the agreed project cost through loans from the Fund, subject to at least 25% of the additional financing being funded by investors equity and without affecting the provisions agreed on the IA and EPA (para 3.10 (a));

(o) cause the subproject companies to establish at the time of the commissioning of PS subprojects a debt service escrow account which would at all times hold sufficient funds to meet six months debt service requirements (para 3.10(b)); and

(p) enter into arrangements under which the commercial loans and/or export credits obtained for the purposes of the subproject company shall have priority over the financing obtained from the Fund for such purposes in the allocation and distribution of funds available with the subproject company for repayment (para 3.10(c)).

5.02 During negotiations, NDFC agreed to:

(a) ensure that all loans to subprojects costing more than US$30 million would be subject to prior review and approval by the Bank (para 2.24); and

(b) ensure that all subprojects to be financed by the Fund: (i) would be undertaken by companies incorporated under Pakistan Companies Ordinance with at least 51% PS ownership, (ii) should be assisted by engineering consultants and financial advisors, satisfactory to the Bank, in the preparation and implementation of subproject, (iii) should engage principal contractors, satisfactory to the Bank, in the construction and commissioning of subprojects; (iv) not less than 50% of the foreign debt requirements shall be obtained from sources other than the Fund (para 3.06).

5.03 The following will be conditions of loan effectiveness:

(a) the preparation of a brochure, satisfactory to the Bank, detailing the guidelines for the preparation, review and evaluation of PS proposals (para 2.11);

(b) the establishment and staffing, satisfactory to the Bank, of a Private Power Cell in Ministry of Water and Power, and a Coal Mining Cell in Ministry of Petroleum and Natural Resources to strengthen the institutional capabilities for mobilizing PS investments (para 2.12);

(c) GOP's causing WAPDA to establish and staff, satisfactory to the Bank, a private power cell in the Authority (para 2.14);

(d) the establishment and staffing of the Fund, and the execution of an Administration Agreement between GOP and NDFC, to the satisfaction of the Bank (para 2.17);

(e) the furnishing for approval, to the Bank, of the guidelines for the operation of the Fund, including guidelines for appraisal, approval and supervision of subprojects (para 2.18);

(f) the fulfillment of all conditions precedent to the effectiveness of the Cofinancing Agreements providing for cofinancing funds in an aggregate amount equivalent to about US$150 million in addition to the proposed Bank loan (para 2.19); and

(g) the appointment of technical consultants and financial firms, under terms and conditions satisfactory to the Bank, to assist the Fund in appraisal and supervision of subprojects (para 2.25).

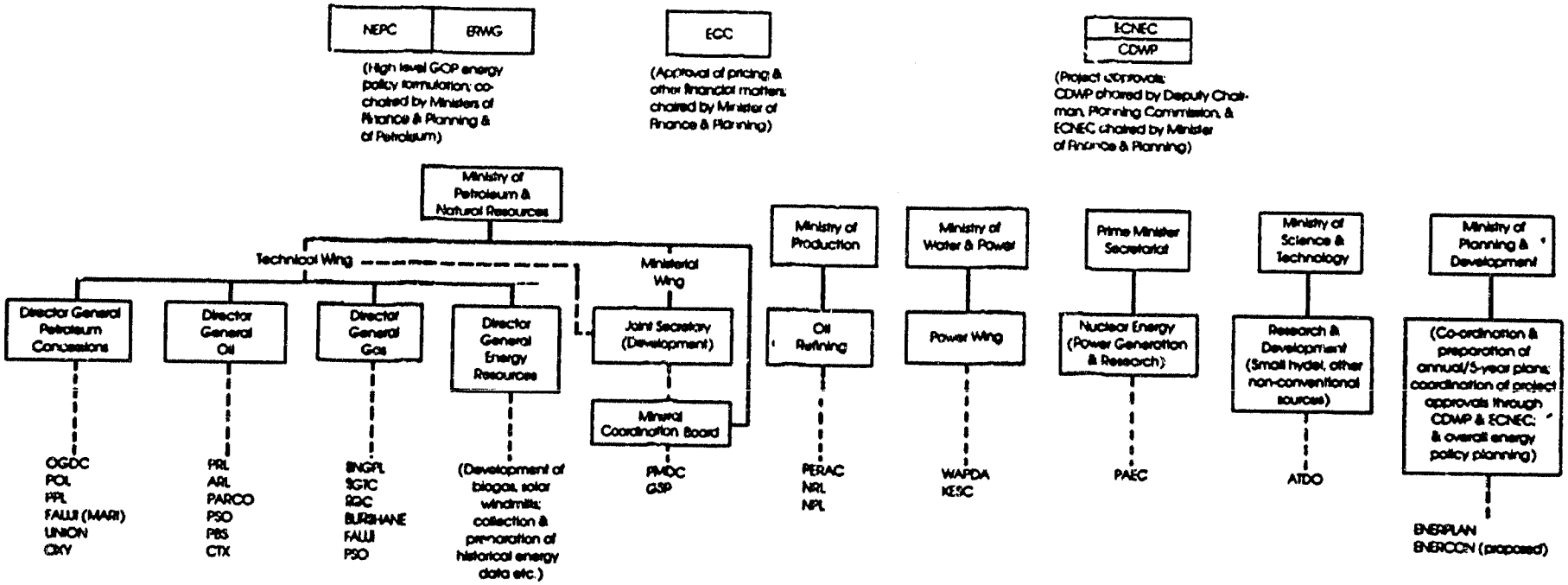
Recommendation

5.04 Subject to the above conditions, the Project is suitable for a Bank loan of US$150.0 million equivalent.

PAKISTAN

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

Organization Chart



Legend:

NEPC — National Energy Policy Committee
ERWG — Energy Review Working Group
ECC — Cabinet's Economic Coordination Committee
ECNEC — Executive Committee of the National Economic Council
CDWP — Central Development Working Party
OGDC — Oil & Gas Development Corporation
POL — Pakistan Oilfields Ltd
PPL — Pakistan Petroleum Ltd.
FAUJI — Fauji Foundation
UNION — Union Texas Co. of USA

OXY — Occidental Co. of USA
PMDC — Pakistan Mineral Development Corporation
GSP — Geological Survey of Pakistan
PRL — Pakistan Refinery Ltd.
ARL — Attock Refinery Ltd.
PARCO — Pak-Arab Refining Co.
PSO — Pakistan State Oil Co. Ltd.
PBS — Pakistan Burmah Shell
CTX — Caltex of USA
SNGPL — Sui Northern Gas Pipelines Ltd.
SGTC — Sui Gas Transmission Co. Ltd.
SGC — Southern Gas Company

BURSHANE — Subsidiary of Burmah & Shell Oil
PERAC — State Petroleum Refining & Petrochemical Corp.
NRL — National Refinery Ltd
NPL — National Petroleum Ltd. (for proposed hydrocracker)
WAPDA — Water & Power Development Authority
KESC — Karachi Electric Supply Corporation
PAEC — Pakistan Atomic Energy Commission
ATDO — Appropriate Technology Development Organization
ENERPLAN — Energy Planning & Development
ENERCON — Energy Conservation Center

World Bank—25888

ANNEX 1.1

PAKISTAN

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

Subprojects Under Consideration

1. GOP has so far issued letters of intent to four investors for subprojects, which form a part of the least cost development plan and fulfill the eligibility criteria for PS investments. These proposals are expected to add about 1450 MW of installed capacity, of the 2,300 MW expected to be provided by PS during the Seventh Plan. In addition, three proposals that would provide another 212 MW are presently under review. Some of the subprojects presently under consideration would, in addition to augmenting the installed capacity, introduce Fluidized Bed Combustion technology in Pakistan, which would enable the use of domestic coal for power generation. A proposal for the development of coal mining at Lakhra for the production of about 1.2 million tons is also currently under preparation. The proposals submitted to GOP and at an advanced stage of formulation, are listed in Table 1.0. The scope and status of each subproject is discussed below.

Table 1.0:
Status of Subprojects

	Subproject	Capacity	Project Cost[1/] (US$ million)	Present Status
1.	Habibullah Mines Ltd	130 MW	158	LOI issued in August 1987
2.	Hab River Power Project	1200 MW	840	Two LOIs for 600 MW each, issued in April 1988
3.	Hab Chowki Diesel	120 MW	70	LOI issued in May 1988
4.	Pakland Energy Phase I	132 MW	165	Proposal submitted in March 1988
5.	INTRAG	80 MW	113	Proposal submitted in April 1988
6.	Deutsch Babcock	160 MW	207 [2/]	Proposal under preparation
7.	Hydro Station	140 MW	210 [2/]	Proposal under preparation
8.	Lakhra Coal	1.2 MT/ annum	180 [2/]	Proposal under preparation
9.	Hadson Corporation	120 MW	145 [2/]	Proposal under preparation

1/ Includes IDC.
2/ Preliminary estimates.

Habibullah Mines Ltd

2. The subproject, submitted to GOP by a consortium comprised of Habibullah Mines Ltd (Pakistan) and Siemens AG (West Germany) in June 1987, would involve the development of a 100 MW coal fired steam station at Lakhra in Sind Province and a 30 MW steam station at Quetta in Baluchistan. The proposed plant at Lakhra would comprise two Fluidized Bed Boilers with matching steam turbine generators rated at 50 MW. The power would be supplied to WAPDA at 132-kV. The coal requirement of about 0.5 MT would be supplied from the coal mines owned by Habibullah Mines Ltd. The two 15 MW units at Quetta would be conventional coal fired units. The coal requirement of about 0.1 MT for the plant would be also supplied by coal mines owned by Habibullah Mines in Baluchistan. The first unit at each of the power stations would be commissioned in mid-1991. The estimated cost of subproject, expressed in 1987 prices, is US$158 million.

Hab River Power Complex

3. A joint proposal by XENEL Industries Limited, Saudi Arabia and Hawker Siddeley Power Engineering, UK, was submitted to GOP in December 1987. A letter of intent was issued in April 1988. The proposed subproject would involve the development of a 1200 MW oil fired steam power plant located in Baluchistan province, about 4 kms south of Khalifa Point at the northern shore of the mouth of Hab River. The proposed site comprises of sandy ground adjacent to the shore line and is uninhabited. A preliminary environmental impact screening study for the project has been completed and no environmental problems are anticipated. The access to the plant site will be through a 25 km road to be constructed from the city of Hab Chowki and would be used to transport personnel and material to the project site. The heavy construction equipment and fuel oil supply to the plant will be through barges. These will be unloaded at the jetty proposed to be constructed at the mouth of the river.

4. The power plant will comprise of four oil fired units of 300 MW each along with associated mechanical and electrical facilities. The units would be drum type steam boiler units, with superheater and reheater steam sections operating in unison with four tandem compound turbine generator units. The turbines will exhaust into condensers with once through cooling system using sea water drawn though an intake channel from the Arabian sea. The hot water will be discharged into a basin in the Hab river which will also be used for unloading oil. A seaside breakwater structure will be constructed to protect the barges during high seas and to guide the cooling water from the basin into the sea. The power plant will operate on heavy fuel oil containing about 3.5% sulphur. The oil is proposed to be supplied through barges by Pakistan State Oil. The plant will send out 1200 MW at 220 kV/500 kV and is proposed to be connected to the grid substation at Jamshoro and Karachi. The plant design will be such as to ensure compliance with Bank's environmental guidelines.

5. The feasibility study for the proposed project is expected to be submitted by October 1988, and would include details of project design, basis of system selection, specification of equipment, cost estimates, implementation arrangements, financing plan, price, draft agreements for supply of fuels and services, draft power purchase agreement, environmental impact assessment study, details of other elements forming the security package, etc. During this period, the investors will also select consultants for detailed engineering, contractors for project construction, and finalize operation and maintenance arrangements. The project will be implemented by a company incorporated in Pakistan. The schedule envisages the commissioning

of the first unit within 36 months of financial closing i.e. October 1991. The subsequent units would be commissioned at an interval of two months each, thereafter. The estimated cost of the subproject expressed in September 1987 prices, is US$840 million.

Pakland Energy Phase I

6. A proposal by a consortium comprising of Pakland Energy Ltd. (Pakistan), Pyropower Corporation (USA), and Bechtel Inc. (USA) has been submitted to GOP . The proposed subproject involves the development of a 132 MW generating station with possible expansion to 264 MW. The plant site is located near Petaro, 18 kms from the city of Hyderabad in Sind Province of Pakistan. Land for the plant is owned by Pakland Energy Ltd and is in close proximity of the coal mines and limestone quarry. The plant would comprise of three Ahlstrom Pyroflow Circulating Fluidized Bed (CFB) boilers with a superheater outlet rating of 190 tons steam flow at 1500 psig, 955°F steam temperature, three condensing type steam turbines with generators, each producing a net output of 44 MW. The boiler would use limestone as the fluidizing medium with bag filters removing the fly ash from the boiler effluent. The fuel is indigenous low grade Lakhra coal with a 5750 Btu/lb heating value, 19.5% ash, 32% moisture and 5.2% sulphur. Average fuel burn at full ratings is 29.5 tons/hr. Heavy fuel will be used for startup and as supplemental fuel for up to 30% load. The coal requirement of 0.70 MT/annum for the power plant would be supplied from four privately owned mines located in the Lakhra area. The coal would be transported from the Jamshoro-Khanot-Lakhra road by dump trucks. The limestone requirement of about 0.3 million tons would be supplied from the Pakland mining leases which are located within a radius of about 3 kms from the power plant. The ash from the plant will be transported to the abandoned limestone quarry sites. The cooling water system proposed is a closed circuit system using cooling tower. Water for the plant will be pumped from Indus river located at about 6.5 kms. A single circuit 132-kV transmission line would connect the plant to the grid. The first 44 MW units is planned for commissioning within twenty-eight months of financial closing and the other two units at an interval of two months thereafter. The estimated cost of the subproject, expressed in 1987 prices, is US$165 million.

Diesel Station at Hab Chowki

7. Proposals for installation of diesel power plant of 120 MW at Hab Chowki in Baluchistan were invited by KESC. The proposal of Fecto, which was ranked the best by the consultants is being currently reviewed by GOP. The plant, which would comprise six diesel engines of 20 MW each, would operate on furnace oil and sell power to WAPDA at 132 kV. Part of the 25% equity contributed by the investors is expected from Sulzer, Switzerland. The plant is expected to be commissioned two years after the signing of the Implementation Agreement. The estimated cost of the subproject, expressed in September 1987 prices, is US$70 million.

80 MW Coal-Fired Plant by INTRAG

8. The proposed subproject includes the development of a 80 MW coal-fired steam station and associated facilities located at Kallar Kahar in Punjab. A

proposal by Inter Redec Group of Pakistan and INTRAG, Inc. of USA was submitted to GOP on April 5, 1988. The power plant would consist of a one unit of 80 MW using circulating fluidized bed boiler suitable for domestic coal. Coal requirements estimated at 0.4 million tons/annum would be met from operating coal mines within 50 kms of the plant, in the Makarwal coal fields of Salt Range. The coal to the plant would be transported by trucks. Limestone requirement of 0.06% MT/annum would be met from the limestone quarries located within 50 km of the plant. The investors are also exploring the possibility of obtaining leases of lime mines from GOP. The plant would consist of single fluidized bed boiler, non reheat condensing turbine with an air cooled generator capable of delivering 80 MW. Closed circuit cooling using mechanical draft cooling towers would be used. The unit is expected to be commissioned in January 1992 within 30 months of financial closing. The estimated cost of the subproject, expressed in January 1988 prices, is US$113 million.

Proposals under Preparation

9. Four proposals, three for installation of power plants and one for the development of the Lakhra coal mine are presently under formulation and are expected to be submitted to GOP shortly. A proposal for installation of two units of 80 MW each is being prepared by Deutsch Babcock of West Germany. These proposals would be based on fluidized bed technology and would use coal from the private mines at Lakhra. A proposal for installation of two 60 MW units is being prepared by Hadson Corporation of USA, in joint venture with Haideria Minerals Ltd., of Pakistan. The generating units would be based on circulating fluidized bed technology and would use coal from mines located in Chakwal district in Punjab Province. A foreign investor group has also shown interest in developing a 140 MW hydro site. Kumagai-Gumi of Japan and Davy McKee of UK are presently preparing a proposal for the development of Lakhra mine using a mechanized system of multiseam underground mining for initial annual input of 1.2 MT. The first stage of the mine development is expected to take about two years after financial closing.

ANNEX 2.2

PAKISTAN

Private Sector Energy Development Project

Consulting Services and Training

Agency	Consultancy Services	Long-term Advisors	Training
	Estimated Manmonths		
1. MWP			
(i) Preparation of Brochure (ii) Appraisal and evaluation of subprojects	20)) 40)	24	5
2. WAPDA			
(i) Review and negotiation of PPA	15	24	3
MPNR			
(i) Preparation of Brochure (ii) Appraisal and evaluation of subprojects	15)) 10)	12	4
4. NDFC			
(i) Preparation of guidelines for operation of fund, and appraisal and supervision of subprojects (ii) Appraisal and supervision of subprojects	30)) 150)	60	18
5. MOF			
(i) Feasibility for separation of the Fund	10	-	-
	290	120	30

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ANNEX 2.3

PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

Timetable for Implementing Institutional Improvement

Executing Agency	Effectiveness (October 31 1988)	Dec. 31 1988	March 31 1989	June 30 1989	Oct. 31 1989	Dec 31 1989	March 31 1990
Ministry of Water & Power	Establish PPC and appoint Director General and one Power Engineer						
	Prepare Brochure	Recruit consultants to assist in review and evaluation of PS proposals and negotiations of IA					
Ministry of Petroleum and Natural Resources	Establish CMC and appoint Director						
	Prepare Brochure	Recruit consultants to assist in review and evaluation of PS proposals and negotiations of IA					
National Development Finance Corporation			Prepare the procedures and furnish to Bank				
	Recruit consultants to assist in appraisal, procurement packaging and supervision of subprojects and training the fund staff						
	Recruit consultants in preparation of procedures for the fund						
Water & Power Development Authority 1/	Establish WPPC and staff it with Manager and one Power Engineer	Recruit consultants to assist in PPA preparation and negotiations and train WPPC staff					
Ministry of Finance	Establish and staff the Fund and sign Administration Agreement with NDFC				Recruit consultants to undertake a study to assess the feasibility of separating the Fund.		Review recommendations of the study and agree on timetable for implementing agreed recommendation

1/ Ministry of Water and Power would be the executing agency for this component.

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Private Sector Energy Development Project

Proposed Arrangements to Facilitate PS Investments in Energy

1. The process for review and approval of PS proposals, and the appraisal, finance of subproject and the supervision of their implementation involves four phases: Phase 1 covers the activities from the response of PS to call for proposals or submission of unsolicited proposal to the issue of letter of intent; Phase 2 covers the activities from issues of letter of intent to the start of physical implementation; Phase 3 covers the implementation stage; and Phase 4 covers the operations stage. Flow charts of the process are presented in Attachment to this Annex.

Phase 1: Response of PS to Issue of Letter of Intent

2. Proposals from PS could be invited through a general announcement, or a bidding process to implement projects at identified sites, for which studies e.g feasibility, environmental impact etc., have been prepared by the Government. The Bank would assist GOP in identifying such sites. Proposals would be submitted to the responsible unit in each ministry, i.e. power subproject proposals to PPC in MWP, oil/gas development proposals to DGPC in MPNR and coal development proposals to CMC in MPNR. Each proposal would be accompanied by a non-reimbursible fee of US$20,000 equivalent and a copy would be submitted to the Bank to review.

3. The responsible unit within the respective ministry would review each proposal received in which they would be supported by consultants. The reviews would ensure competitiveness under the two proposed solicitation options by considering proposals that offer prices below the avoidable cost. The responsible unit would involve on a case to case basis, other GOP ministries and organizations. The Ministry of Planning and Development would review the integrability of the proposed subproject with the least cost plan for the subsector. Ministry of Transport and Communications would review the necessity and feasibility of any infrastructural facilities to be made available to the proposed subproject. Ministry of Petroleum and Natural Resources would review the arrangements for supply of fuel to thermal power projects, or for evacuation of fuel produced in case of oil, gas and coal development projects. Ministry of Finance and Economic Affairs would review the foreign exchange requirements proposed as well as coordinate the review of proposals by the Fund and the Bank. The Bank would review the proposal on behalf of all the donors and make available its comments on the proposal to GOP. In case of power subprojects, WAPDA would review the proposals from the points of view of technical feasibility and system interconnection. The investors would be requested to provide any clarifications and be asked to revise the proposal if necessary.

4. After the successful conclusion of discussions with the investors where the queries raised by all the reviewers, including the Bank, have been resolved, the responsible unit would prepare a brief to the ECC which includes a draft LOI. The brief would be circulated to all the concerned ministries. The draft LOI would be sent to the Bank for comment. The LOI would provide:

(a) exclusive rights to the particular investor to undertake site configuration; (b) adequate time as well as checks and balances such as requiring a performance guarantee from the investors to prepare the detailed feasibility; (c) a price to be paid for energy produced by the subproject in constant terms, i.e., in prices prevailing at the time of issue of LOI; (d) appropriate reopeners to revise the energy purchase price if necessary; (e) for indices that would be applicable to periodically revise certain aspects of the energy purchase price; and (f) an undertaking by GOP that it would be willing to sign an IA and guarantee an EPA which includes a guaranteed off-take level on a take-or-pay basis. The draft LOI submitted to ECC with the Ministry's brief would have incorporated all comments received from the Bank, GOP's other ministries and organizations. ECC's review could result in calling for revisions in the brief or in the proposal. If the revisions are required in the brief, the concerned ministry would revise the brief. If the revisions are to be made in the proposal, the investor would be instructed accordingly. On the other hand, ECC could itself recommend certain modifications to the brief and authorize the concerned ministry to issue the LOI.

Phase 2: Issue of LOI to Physical Implementation

5. The concerned ministry, MWP in cases of power subproject proposals, MPNR in cases of oil/gas and coal proposals, would issue the LOI. The LOI would have a specific validity period e.g, nine months, from date of issue. The investor would be allowed a specific time period, e.g., six months, to prepare a detailed feasibility study. This would allow sufficient time e.g., three months, for review of the detailed feasibility, negotiate and execute the agreements before the LOI expires. The investor would be given one month from the date of issue of LOI to accept the LOI during which time he could seek clarifications from GOP. If the LOI is acceptable to the investor, he would accept the LOI and provide a performance guarantee of US$1 million to GOP indicating his commitment to complete the detailed feasibility.

6. The investor would incorporate a subproject company in Pakistan under the Companies Ordinance and complete a detailed engineering with the assistance of an internationally reputable engineering consultancy firm. Parallely, he would complete the financial engineering process with the help of an internationally reputable investment banking firm, to mobilize the necessary limited recourse financing. The completed detailed feasibility would include confirmed sources of supply of equipment as well as firm commitments of financing from commercial lenders and export credit agencies. At the time of submission of the detailed feasibility to GOP, the subproject company would also submit a copy of the proposal to the Fund, 1/ accompanied by an appraisal fee of 1/4% of the loan amount being requested.

1/ The investor need not necessarily approach the Fund to mobilize 30% of the project cost. However, in view of: (i) the attractiveness of the Fund's resources in terms of repayment period; (ii) participation by the Fund in the subproject implies GOP's commitment to the subproject which would greatly help mobilization of limited recourse financing; and (iii) the cost overrun and debt service reserve facilities offered by the Fund for subprojects that the Fund is cofinancing, it is expected that each investor would approach the Fund for resources.

The detailed feasibility would be reviewed by GOP to ensure that the proposed subproject is technically viable and offers the minimum price below the avoidable cost. The Bank would review the detailed feasibility study. It as well as review the draft IAs, EPAs and other agreements as necessary and provide its comments to GOP. NDFC's PED would appraise the subproject on behalf of the Fund and furnish a detailed appraisal report to the Bank including the recommendation on the loan from the Fund for the Bank's approval. In case of: subprojects introducing new technology, e.g., fluidized bed combustion plants, and large scale projects, the Bank would appraise the project with NDFC. Subject to successful completion of the review of the detailed feasibility by GOP, NDFC's Board, acting on behalf of the Fund, would approve the loan to the subproject. The subproject company would immediately initiate the negotiations and execution of: (a) the IA with GOP; (b) the EPA with the energy purchasing entity; (c) the Contractors Agreement with the principal contractor; and (d) the Loan Agreement with the various lenders, including the Fund. On a case-to-case basis, the subproject company would execute a Shareholders' Agreement, Operation and Maintenance Agreements and Fuel Supply Agreements.

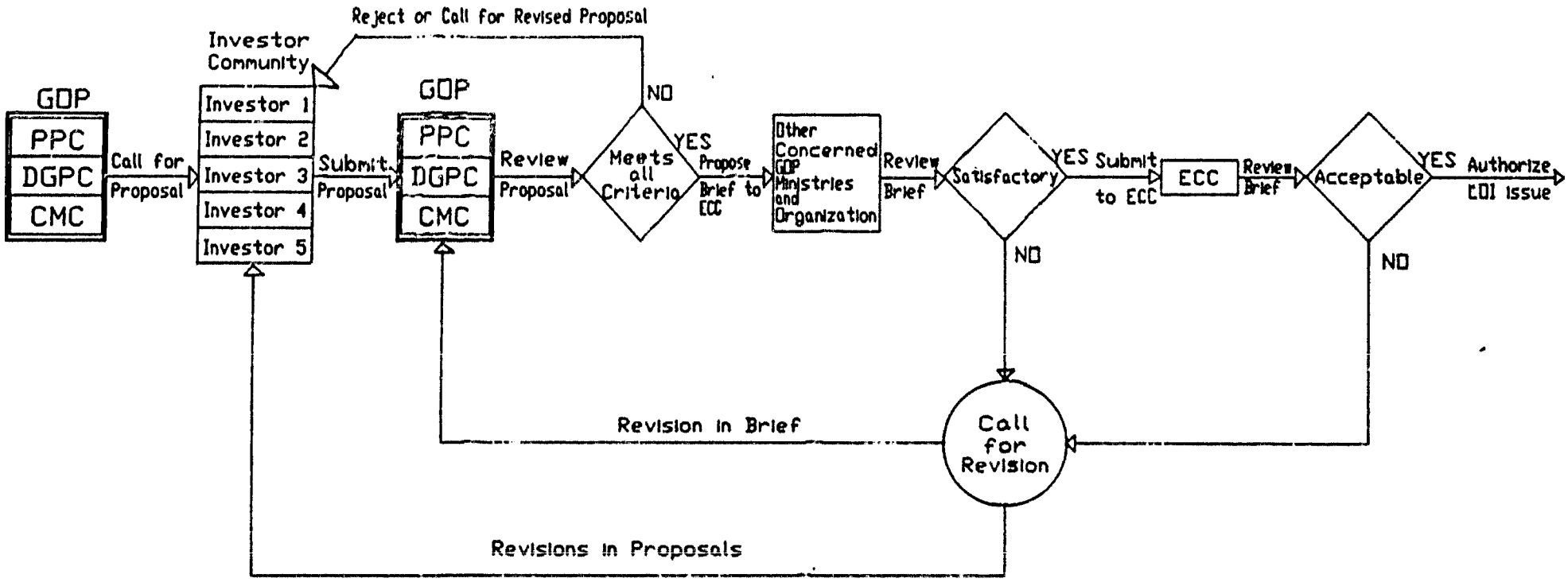
Phase 3: Implementation Stage

7. The subproject company would implement the subproject through the principal contractor in accordance with the schedule agreed to in the IA. PED would supervise the subproject implementation on behalf of the Fund and send quarterly progress reports to the Bank. PED would also be responsible for ensuring that the subproject company mobilizes the equity portion of the financing, debt financing to match the cost expenditure profile of the subproject. The Bank would supervise the implementation of subprojects during the supervision of the proposed Project. In addition, the Bank would be responsible for monitoring procurement under Bank funds. In order to finance any cost overruns, if any, the subproject companies would utilize the lines of credit provided by the lenders and also provide an additional equity not exceeding 10% of original amounts. The additional financing would be capitalized based on the cost escalation provisions agreed in IA. Cost overruns that cannot be covered by the above funds, if any, would be covered by a cost overrun facility established by the Fund. The subproject companies would pay a commitment charge for the cost overrun facility.

Phase 4: Operations Stage

9. The subproject company would operate the subproject plant (through an operations and maintenance contractor if the subproject company is itself not the operator) in accordance with the stipulations of the EPA. PED would monitor the operation of the subproject on behalf of the Fund. In doing so, it would ensure that the subproject company maintains three escrow accounts: one for receiving all the revenues due to the subproject company from the energy purchaser and channelling them to meet the obligations of the subproject company; another for holding the ensuing six months' debt service obligations of the subproject company; and yet another for holding a portion of the investor's return on equity to ensure the investors' continued commitment to the subproject.

Phase 1: Call for Proposals to Issue of Letter of Intent

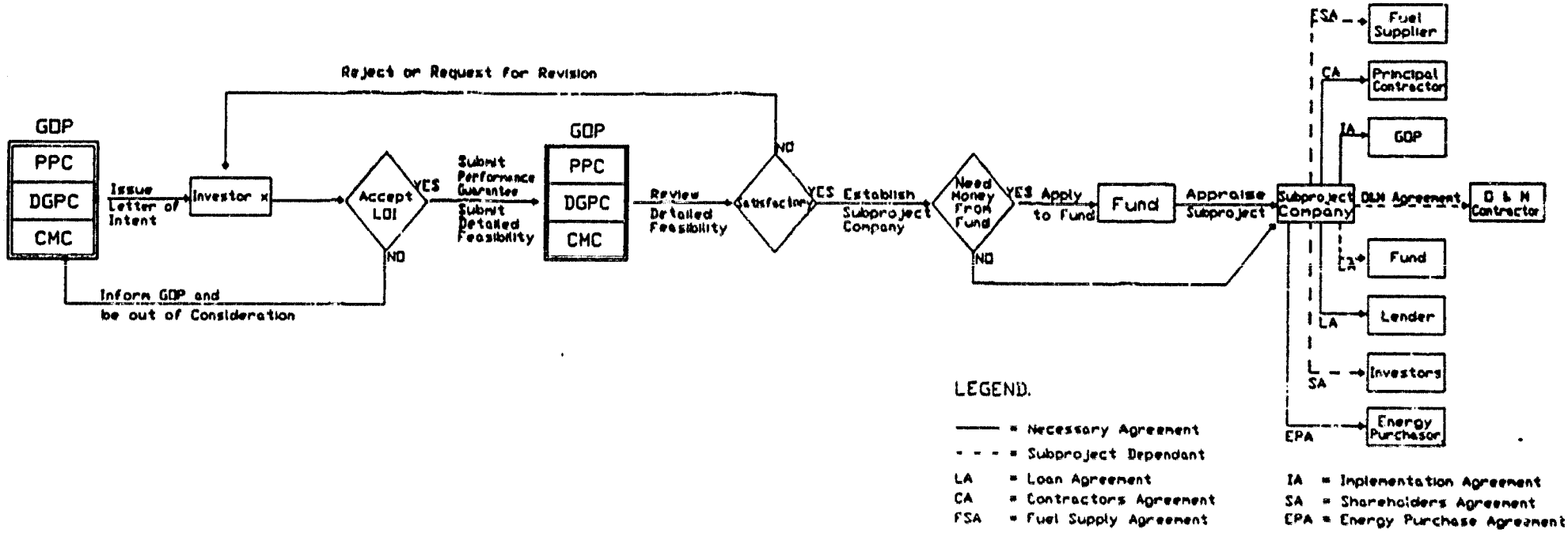


Abbreviations

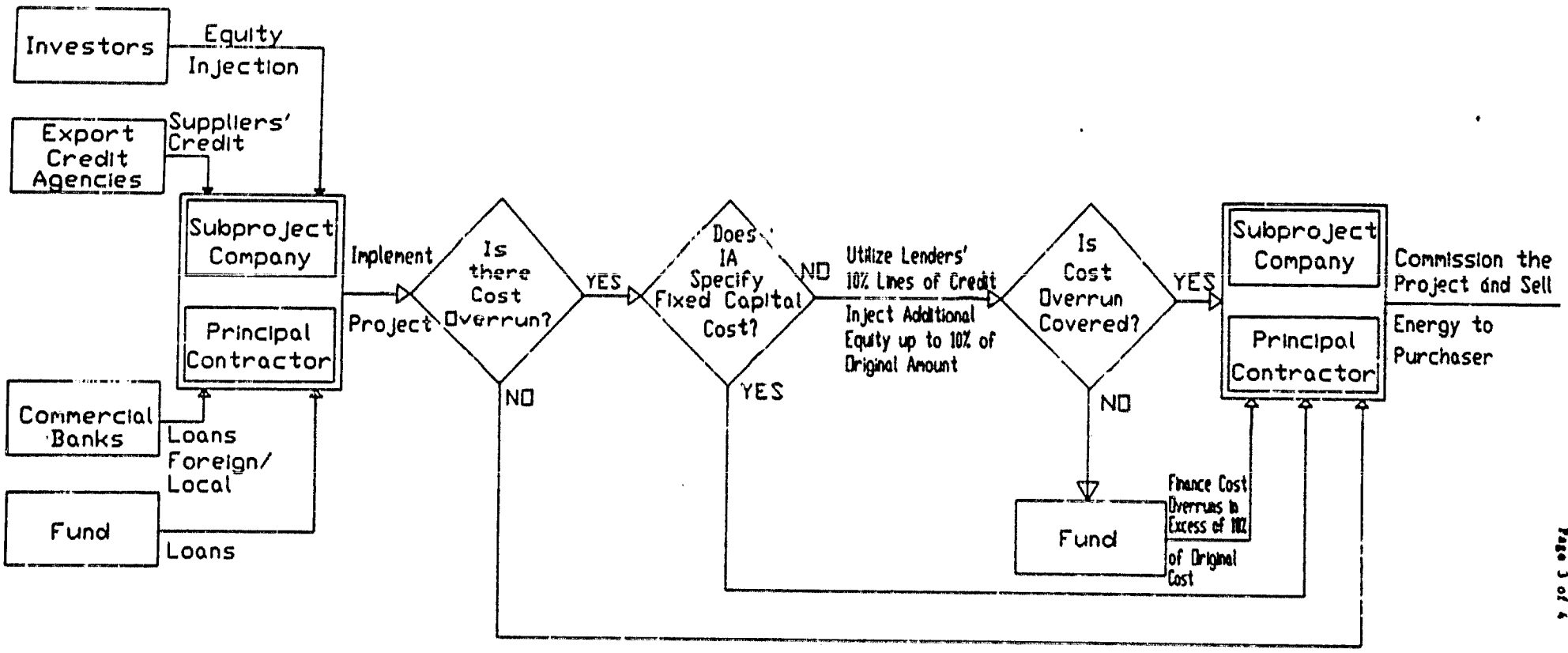
PPC = Private Power Cell (Min. of Water & Power)
DGPC = Directorate General of Petroleum Concessions (Min. of Petroleum & Natural Resources)
CMC = Coal Mining Cell (Min. of Petroleum & Natural Resources)
ECC = Economic Coordination Committee of Cabinet
LOI = Letter of Intent

□ Institution(s)
◇ Decision Point
→ Process

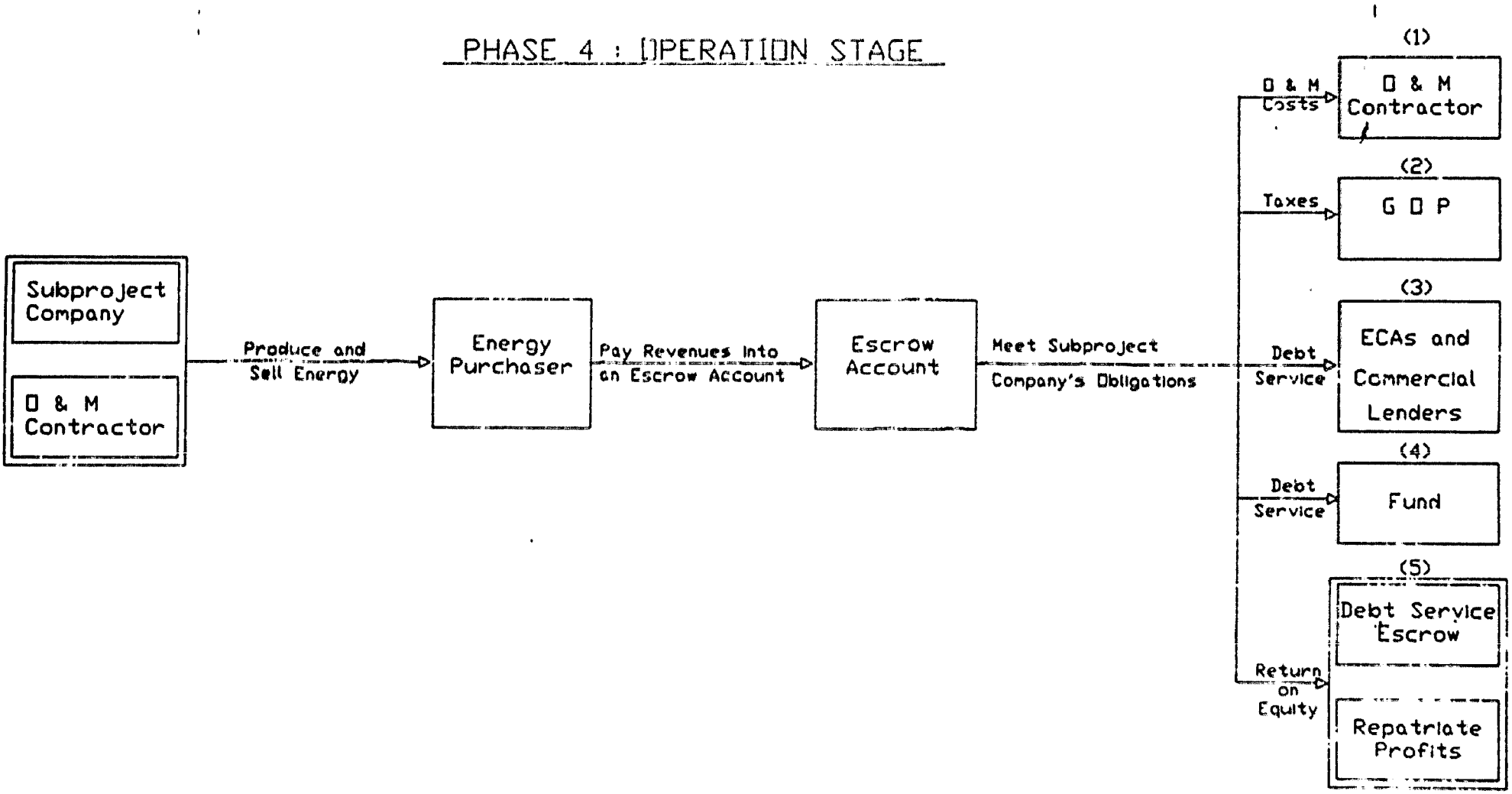
Phase 2: Issue of Letter of Intent to Start of Implementation



PHASE 3: IMPLEMENTATION STAGE



PHASE 4 : OPERATION STAGE



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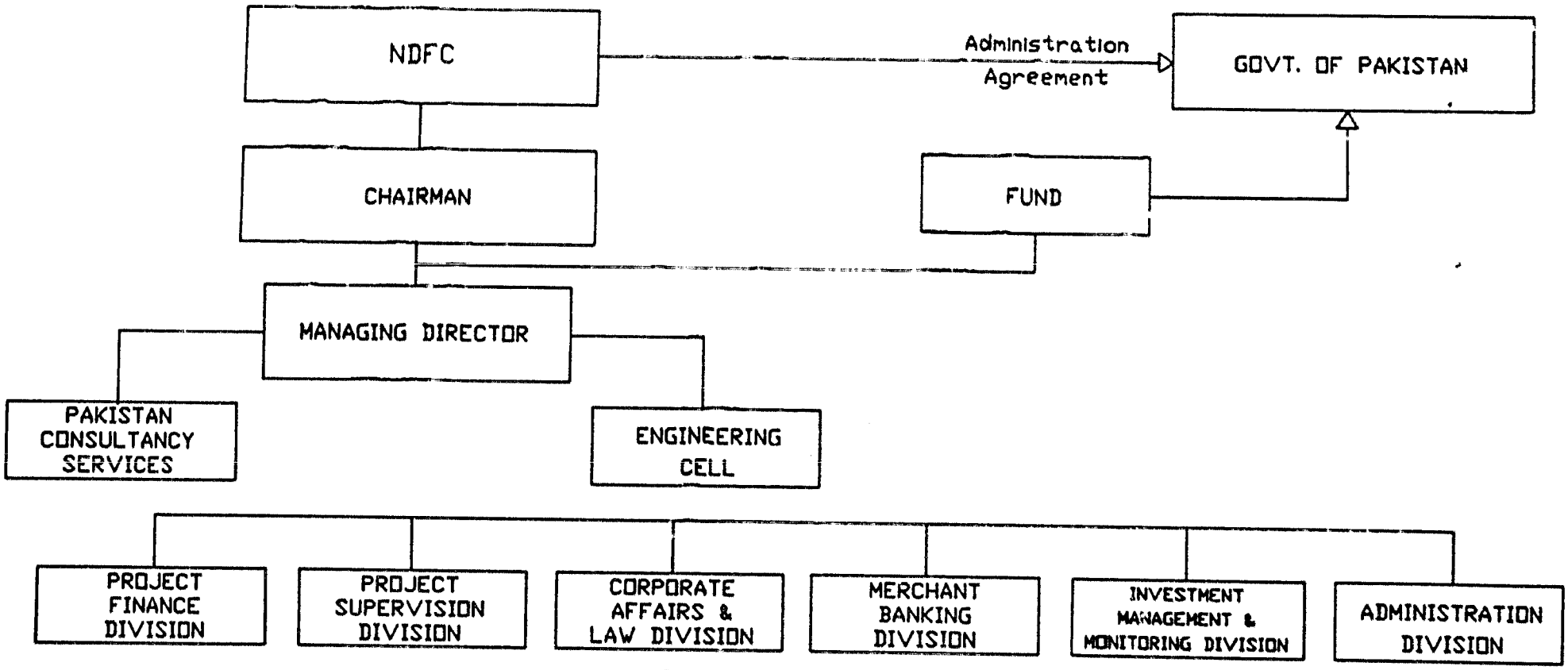
Private Sector Energy Development Project

Relationship Between NDFC and the Fund



Private Sector Energy Development Fund
Sources And Applications Of Funds Statements
(US $ Millions)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
Sources											
From Subprojects											
Interest	2.8	13.8	32.6	53.8	68.2	73.3	72.5	70.8	68.3	65.0	521.0
Repayment									2.7	10.4	13.1
Subtotal	2.8	13.8	32.6	53.8	68.2	73.3	72.5	70.8	71.0	75.4	534.1
Capital Raised											
IBRD	11.3	32.1	42.5	42.0	15.0	3.0					146.0
USAID	9.7	27.5	36.4	36.0	12.8	2.6					125.0
ITALY	3.9	11.0	14.6	14.4	5.1	1.1					50.0
JEXIM	11.6	33.0	43.7	43.2	15.4	3.2					150.0
ODA	4.2	11.9	15.7	15.6	5.5	1.1					54.0
CANADA	2.3	6.6	8.7	8.6	3.1	0.6					30.0
Subtotal	42.9	122.1	161.7	159.8	57.0	11.5					555.0
Other Income											
Commitment Fee	2.6	1.9	1.1	0.3	0.1						6.1
Appraisal Fee	2.5	2.4	3.2	3.2	3.0						14.4
Subtotal	5.1	4.4	4.4	3.5	3.1	0.0	0.0	0.0	0.0	0.0	20.4
Total Sources	50.8	140.3	198.6	217.2	128.3	84.8	72.5	70.8	71.0	75.4	1109.5
Applications											
Disbursements	42.9	122.1	161.7	159.8	57.0	11.5					555.0
Debt Service 1/											
IBRD	0.5	2.2	5.2	8.6	10.8	12.3	14.3	16.7	18.8	19.0	108.2
CANADA	0.1	0.4	0.9	1.5	1.9	2.2	2.5	2.9	3.2	3.3	19.0
JEXIM	0.3	1.5	3.5	5.3	7.4	8.6	10.7	13.3	15.7	16.3	83.2
ODA	0.1	0.6	1.3	2.2	2.8	2.9	3.0	3.0	3.2	4.0	23.0
ITALY	0.1	0.7	1.6	2.6	3.2	3.5	3.5	3.5	3.7	4.2	26.5
Subtotal	1.1	5.3	12.5	20.7	26.2	29.5	34.0	39.3	44.7	46.7	259.9
Operating Fee	0.2	0.8	1.5	2.3	2.6	2.6	2.6	2.5	2.4	2.3	19.9
Equity Reserves	6.6	12.1	22.9	34.4	42.5	41.1	35.9	29.0	23.9	26.4	274.8
Total Applications	50.8	140.3	198.6	217.2	128.3	84.8	72.5	70.8	71.0	75.4	1109.5

1/ Excludes Exchange Rate Insurance Premium.

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NATIONAL DEVELOPMENT FINANCE CORPORATION

PRIVATE SECTOR ENERGY DEVELOPMENT FUND

Estimated Schedule of Disbursements
(US$ Million)

Bank Fiscal Year and Semester	In Semester	Cumulative	Cumulative %
1989			
December 31, 1988	4.7	4.7	3.13
June 30, 1989	7.0	11.7	7.80
1990			
December 31, 1989	13.3	25	16.67
June 30, 1990	19.9	44.9	29.93
1991			
December 31, 1990	16.6	61.5	41.00
June 30, 1991	24.8	86.3	57.53
1992			
December 31, 1991	25.9	112.2	74.80
June 30, 1992	17.2	129.4	86.27
1993			
December 31, 1992	10.6	140	93.33
June 30, 1993	7.1	147.1	98.07
1994			
December 31, 1993	1.7	148.8	99.20
June 30, 1994	1.2	150.0	100.00

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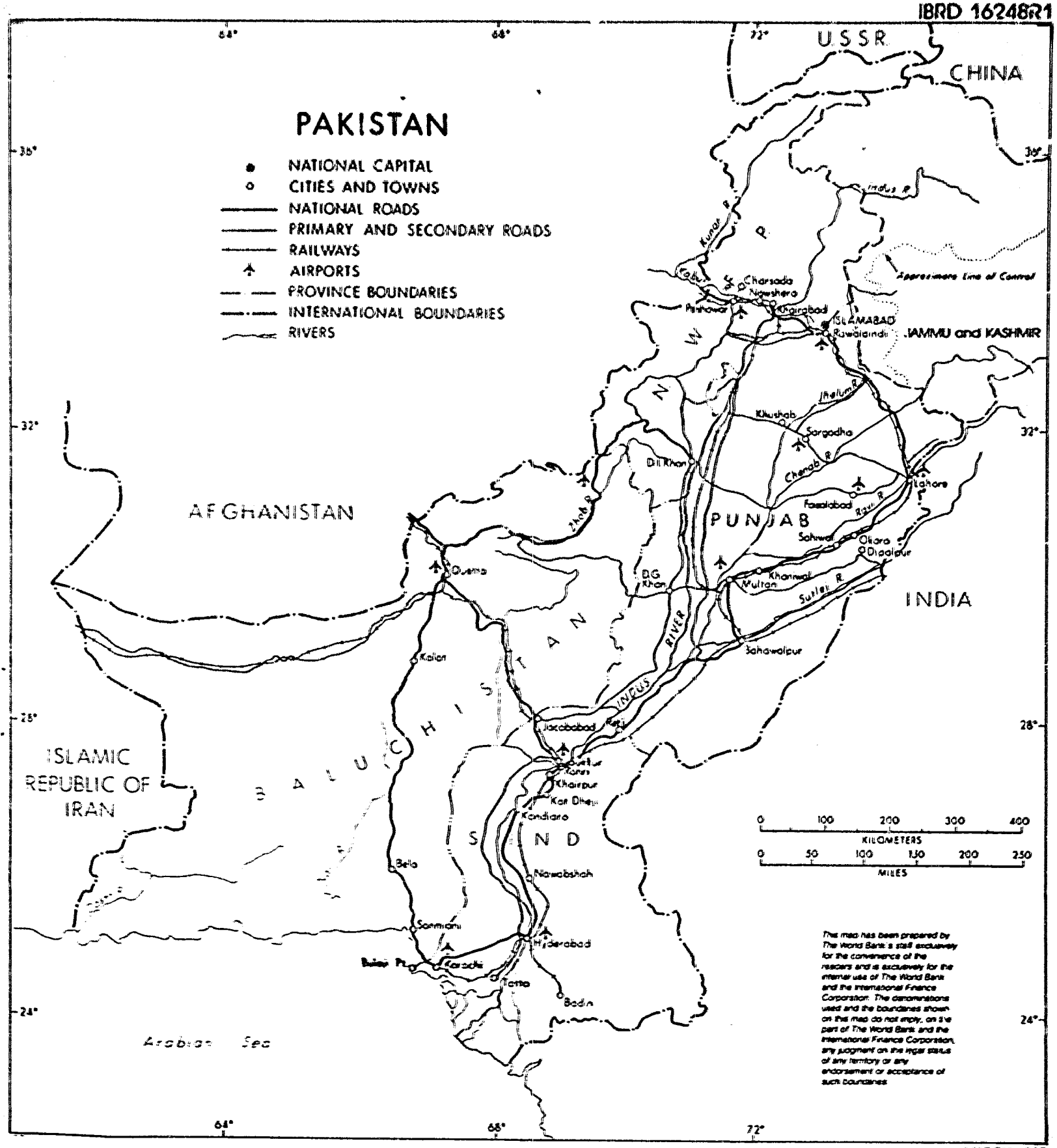
PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT

Documents and Information in the Project File

- Proposal for 132 MW Power Generation Project /PAKLAND
- Proposal for 600 MW Power Plant /NIDC, Xenel
- Proposal for 80 MW Power Plant /INTRAG
- Proposal for 1200 MW Power Plant Hab River
- Draft Implementation Agreement
- Draft Power Purchase Agreement
- 1200 MW Hab River Power Complex - Financial Model
- Draft Letter of Intent for the Establishment of Private Power Generating Plant in Baluchistan
- 1200 MW Private Power Generating Plant - Khalifa Point
- Pre-feasibility Study - 1200 MW Oil Fired Power Station
- Southern Pipeline Project
- Proposal for a Feasibility Study for a Coal Fired Plant in Baluchistan
- Draft Operating Framework for Private Sector Window
- Environmental Assessment for WAPDA Coal Fired Power Plant and Hab River Complex at Khalifa Point.
- National Development Finance Corporation Act, 1973
- National Development Finance Corporation, Statement of Policy (Revised September 1987)

IBRD 16248R1



MARCH 1987

Annex J
Private Sector Power Project

NDFC Financial Analysis

According to AID Handbook 2, Appendix 3D, 6.0 on intermediate credit institutions, this section of the PP analyzes the financial operations of the National Development Finance Corporation and finds this institution to be financially viable.

This analysis has been based on the Annual Accounts and Annual Reports from 1981 to 1986, the National Development Finance Corporation Act of 1973 and the Statement of Policy approved April 1975 and amended November 1984.

1. Interest Rate Spread

The interest rate spread--the difference between the interest rate paid on borrowings and that charged to customers--over the last five years and ranged from 1.1 in CY 1983 to 3.2 in CY 1985. Because the NDFC has sources of income outside of its loaning activity, such as investments in government securities, underwriting, commissions and fees, it is also useful to look at the earning spread. The earnings spread--the difference between the total activity and the total financial expenses--ranges from 4.3 in CY 1982 to 5.1 in CY 1985. The interest rate and the earnings spread are listed below:

NDFC Interest and Earnings Percentage Spread
From CY 1981 to 1986
(Percentage)

	1981	1982	1983	1984	1985	1986
Interest Spread	2.8	2.1	1.1	2.5	3.2	2.7
Earnings Spread	4.4	4.3	4.4	4.8	5.1	4.6

The NDFC has experienced an increase in compounded net income of 27.8 over the last five years which has been more than adequate to cover the NDFC's administrative cost, permit the accumulation of reserves and provide a high return on equity. The recent progressive increases in these indicators are given below.

NDFC Increases in Reserves, Administrative Expenses
and Return on Equity from CY 1981 to 1986
(Rs Millions)

	1981	1982	1983	1984	1985	1986
Reserves	412	489	603	725	875	996
Admin. Expenses	9	12	20	32	39	48
Return on Equity	71%	86%	103%	100%	100%	127%

2. Loss Experience

No firm data exists in the documents available on the NDFC's loss experience. The NDFC, like all financial institutions, have had bad loans. The available evidence suggests that losses are not inordinate and that the NDFC is taking the appropriate action to minimize bad loans and slow repayment. The 1986 Annual Report mentions that the cash collection of the NDFC improved from 73.32 percent in 1985 to 87.06 percent in 1986. Project loan rescheduling or renewals have also improved from one billion rupees ($59 million), approximately 10 percent of the total loan portfolio in 1985 to Rs. 670 million ($39 million), approximately 5.6 percent of tht total portfolio. It should be mentioned that one of the NDFC's mandates has been to "assist the government in rehabilitation of sick and problem projects." In this pursuit larger losses can be expected.

The NDFC appears to be coming to terms with overdue and uncollectable loans. A specialized division (Investment Management and Monitoring Division) is charged with collection and loan follow-up. The efforts of this division and other parts of the NDFC minimize bad loans by providing timely advice to borrowers, conducting on-the-spot assessments, undertaking studies to rehabilitate sick and weak projects and recommending corrective actions to senior management. In 1986, the NDFC chaired the liquidation of one non-performing company.

3. Cash Flow

The cash flow of the NDFC for the last five years in presented below. The cash flow analysis demonstrates that additional funds for increased on-lending are currently appropriate for the NDFC.

NDFC Cash Flow from CY 1981 to 1986

(Rs Millions)

	actual					projected				
	83	84	85	86	87	88	89	90	91	92
93										
Inflow	619	725	927	1,266	1,711	2,005	2,305	2,663	3,054	3,524
4,060										
Outflow	479	577	751	1,136	1,494	1,773	2,031	2,346	2,703	3,045
3,540										
Cash Flow	140	148	176	130	217	232	274	317	351	429
520										

Collection rates have increased from 80 percent in 1982 to 90 percent in 1987. Demand for loans in the energy sector will be high due to the widespread interest the private sector has demonstrated in electrical utility sponsorship and the dearth of long-term debt finance available on the Pakistani capital market.

4. Debt/Equity and Other Ratios

NDFC debt equity ratio presented below demonstrates a tendancy to decrease leverage of the institution. The current ratio is 4.3:1. This is very strong when compared to ICIs in many other countries but which often have debt/equity ratios as high as 20:1.

NDFC's Debt/Equity Ratio
From CY 1981 to 1986
(Percentage)

	1981	1982	1983	1984	1985	1986	1987
Debt (% of Equity)	3.8	4.1	5.0	4.7	4.3	4.3	4.3

5. Other Ratios

The deposits to assets ratio has continually ranged around fifty percent.

NDFC's Deposit/Assets Ratio
From CY 1981 to 1986
(Percentage)

	1981	1982	1983	1984	1985	1986
Deposits/Assets	50	47	52	49	50	53

The loss reserve to loans ratio, shown below, demonstrates a progressive decrease of reserves to service non-performing loans.

NDFC's Loss Reserve/Total Loans Ratio
From CY 1981 to 1986
(Percentage)

	1981	1982	1983	1984	1985	1986
Reserve for Contingencies/Total Loan Amount	4.2	2.9	2.6	1.9	1.26	0.7

The net income to total assets ratio is somewhat lower than the industry average for Pakistani ICIs which is 2.9 for 1986.

NDFC's Net Income to Total Assets Ratio
From CY 1981 to 1986
(Percentage)

	1981	1982	1983	1984	1985	1986
Net Income/Ave. Total Assets	2.7	2.7	2.7	2.3	2.2	2.4

6. Foreign Exchange Risk

The foreign exchange risk under the project will be entirely allayed by purchasing forward foreign exchange rate contracts from the State Bank. Annual exchange rate insurance premiums vary by currency at the following rates:

U.S. Dollars	3.25
Japanese Yen	7.00
British Pounds	3.00
Italian Lira	3.00

After payment of the first year fee, the accumulated annual fee for later years are paid at the time principal and interest payments are made.

The annual fee the State Bank charges to guarantee rupee convertibility at a "locked in" exchange rate is higher for currencies whose countries have lower interest rates. As a result, unless a foreign loan is available at a rate well below that country's prime interest rate, there would be little difference between the interest rates that a borrower in Pakistan would pay on foreign loans offered at each country's prime rate, once the cost of locking in the exchange rate is included. At present all would cost roughly 14%. That is about the same rate at which medium term rupee loans are made by Pakistani banks to borrowers in the sector which GOP has allocated that credit.

GOP fees for locking in the foreign exchange coverage are reexamined periodically. When the fee is changed, people wishing to maintain their foreign exchange cover must bear the new rate.

FIGURE 1
PRIVATE SECTOR POWER PROJECT IMPLEMENTATION SCHEDULE
CALENDAR YEAR

ACTIVITIES	1988				1989				1990				1991				1992	1993	1994	1995	1996	1997	1998
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q							
A. PROJECT ORGANIZATIONAL ACTIVITIES																							
1. Project Design/Project Paper Prepared																							
2. RFP's for TA Contract Prepared																							
3. Project review and approval by AID/W																							
4. Project Agreement signed with GOP																							
5. TA Contract Solicited and Awarded																							
6. TA Advisors Arrive In-country																							
7. Procurement of Vehicles and Equipment																							
B. INSTITUTIONAL DEVELOPMENT																							
1. Private Power Cell																							
a. Director General Assigned by Min.of W&P																							
b. Staff Assigned by GOP																							
c. Resident TA Advisor in Pakistan																							
d. Short Term TA Advisors in Pakistan																							
e. Staff Training Plan Development																							
f. Staff Training																							
g. Conduct Seminars for Potential Investors																							
h. Coordinate/Review, Private Power Sector Proposals																							
2. WAPDA Private Power Cell																							
a. Director General Assigned by WAPDA																							
b. Staff Assigned by WAPDA																							
c. Resident TA Advisor in Pakistan																							
d. Short Term TA Advisors in Pakistan																							
e. Staff Training Plan Development																							
f. Staff Training																							
g. Identification of Potential Sites in Pakistan																							
h. Preparation of Standard Purchase Agreements																							
i. Preparation of Tenders for Private Sector Proposals																							
j. Receipt, Review, Negotiation and Award of PPAs																							

IMPLEMENTATION

FIGURE 1.1
PRIVATE SECTOR POWER PROJECT IMPLEMENTATION SCHEDULE
CALENDAR YEAR

ACTIVITIES	1988 1Q	1988 2Q	1988 3Q	1988 4Q	1989 1Q	1989 2Q	1989 3Q	1989 4Q	1990 1Q	1990 2Q	1990 3Q	1990 4Q	1991 1Q	1991 2Q	1991 3Q	1991 4Q	1992	1993	1994	1995	1996	1997	1998
3. Energy Wing																							
a. Review of Private Sector Power Proposals																							
b. Additional Staff Assigned by WAPDA																							
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IMPLEMENTATION

CONTRIBUTORS TO PROJECT PAPER

S.NO.	USAID/ISLAMABAD	TITLE
1.	James A. Norris	Director
2.	J. Paul Guedet	Deputy Director
3.	T. David Johnston	Chief, O/E&E
4.	John R. Morgan	Chief, Power Division, O/E&E
5.	James A. Bever	Chief, EPD, O/E&E
6.	Terence T. D'Souza	Program Specialist, O/E&E
7.	Mian Shahid Ahmed	Program Manager, O/E&E
8.	Tahir Ali	Program Specialist, O/E&E
9.	Mukhtarul Haq	Program Assistant, O/E&E
10.	Mohammad Din	Secretary, O/E&E
11.	Tanweer A. Sheikh	Secretary, O/E&E
12.	Shahid Hayat Malik	Secretary, O/E&E
13.	Ashley Ayoob	Secretary, O/E&E
14.	Masood Ahmed	Secretary, O/E&E
15.	Peter Davis	Chief, O/PRO
16.	Wayne F. Tate	Deputy Chief, O/PRO
17.	Robert W. Nachtrieb	Chief, O/PDM
18.	Grant Morrill	Assistant Project Officer, O/PDM
19.	Marian Fuch Carsh	Project Design Consultant, O/PDM
20.	Karim Nayani	Program Specialist, O/PDM
21.	Abid Hussain	Economist, O/PRO
22.	Theodore Carter	Regional Legal Advisor
23.	Fred Will	Contracting Officer
24.	Stan Stanfield	Contracting Advisor
25.	A. Dean Pratt	Controller
26.	Masood Mirza	Project Engineer, O/ ENG
27.	Masood Malik	Energy Advisor, Energy Wing
28.	Farrukh Mahmood	Project Engineer, O/E&E
29.	Atta Bhatti	Secretary, O/E&E
30.	Shahid Pervaiz	Secretary, O/PDM

DESIGN TEAM

1.	Leigh Miller	Banking Specialist, Institutional Services & Technical Institute
2.	Charles Cichetti	Institutional Specialist, Harvard University
3.	Nolan Daines	Utility Specialist, Energy Development International
4.	Don Hertzmark	Economist, Energy Development International
5.	Bruce Perlstein	Financial Specialist, Arthur D. Little
6.	Jack Swift	Power Eng. Specialist, Arthur D. Little Deputy Team Leader
7.	Peter Teagan	Energy & Technology Specialist, Arthur D. Little, Team Leader
8.	Ken Kosky	Environmentalist, K.B.N, Engineering Services

S.NO.	USAID/ISLAMABAD	TITLE
AID/WASHINGTON		
1.	Robert Ichord	C/ANE/TR/ENR
2.	Robert Archer	ANE/TR/ENR
3.	James Sullivan	Chief, S&T/EY
4.	John Hammond	Sr. Energy Advisor/TR/ENR
5.	Mark Gellerson	Economist/ANE/TR/ENR
OTHERS		
1.	David Sanderson	Consultant, Coopers & Lybrand, London
2.	Wynne James	Consultant, Coopers and Lybrand
3.	Ibrahim Elwan	World Bank
4.	Raghoo Sharma	World Bank
5.	Suman Babar	World Bank
6.	Akira Chikaoka	Credit Officer, Ex-Im Bank of Japan
GOP		
1.	V. A. Jaffery	Governor, State Bank of Pakistan
2.	Ashraf Janjua	Deputy Governor, State Bank of Pakistan
3.	M. Akram Khan	Additional Secretary, M/O Water & Power
4.	Aftab Ahmed Khan	Chairman, NDFC
5.	Mohammad Bashir Chaudhry	Vice President. NDFC
6.	Zafar Iqbal	Secretary, M/O Production
7.	M. Ayub Sadozai	Member Power WAPDA
8.	Lt. Gen. Zahid Ali Akbar	Chairman, WAPDA
9.	G. M. Ilyas	Private Sector Cell, WAPDA
10.	Fayyaz Elahi	Private Sector Cell, WAPDA
11.	Izhar-ul-Haq	G. M. Planning, WAPDA
12.	Jalil Anwar	Project Director, Coal Power Project WAPDA
13.	Dr. Fazal Ahmad	Dy. Dir. General, Investment Promotion Bureau
14.	Shahid Ahmad	Director General, Petroleum Concessions, M/O Petroleum & Natural Resources
15.	Ashfaq Mahmood	Chief, Energy Wing, Planning Commission

PRIVATE & COMMERCIAL SECTOR

S.NO.	NAME	TITLE	ORGANIZATION
1.	Talat Hameed	Vice President	American Express
2.	Lloyd Lochra	General Manager	American Express
3.	Abdul Khaliq	Managing Director	Amin Brothers
4.	Mohammad Mian Soomro	Vice President	Bank of America
5.	Ghalib Nishtar	Assistant Manager	Bank of America
6.	Shahzad Shahbaz	Assistant V. President	Bank of America
7.	Masood Akhtar	Member	Banking Council
8.	M. A. Bukhari	General Manager	Bank of Credit & Commerce International
9.	Mohammad Fayyaz	Chief Manager	Bank of Oman
10.	M. Naseer Akhtar	Assistant Gen. Manager	Bank of Tokyo
11.	D. M. Qureshi	Chairman	Bankers Equity
12.	I. H. Shamshi	Sr. Ex. Vice President	Bankers Equity
13.	R. W. Gandre	Vice President	Bankers Trust N.Y.
14.	Ahmad Alman Aslam	Vice President	Citi Bank
15.	John M. Beeman	General Manager	Citi Bank
16.	D. H. Klingensmith	Vice President	Chase Manhattan
17.	Aspi G. Mobed	2nd Vice President	Chase Manhattan
18.	Khalid Akbar	Consultant	Crescent Group
19.	H. M. Luettge	General Manager	Duetsche Bank
20.	Ali Haswani	Vice President	Duetsche Bank
21.	Garry Elliot	Project Dev. Manager	Enserch N.Y.
22.	Ghulam M. Fecto	Chairman	FECTO, Pakistan
23.	Munawar Ali Fecto	Exec. Director R.Pindi	FECTO, Pakistan
24.	R. H. Sanders	Chief Manager	Grindlays Bank
25.	Razi-ur-Rehman	Chief Manager	Grindlays Bank
26.	Kassim Parekh	President	Habib Bank
27.	Mohammad I. Rahmatullah	Vice President	Habib Bank
28.	Hamidullah Piracha	Managing Director	Habibullah Mines
29.	Saeedullah Piracha	Director	Habibullah Mines
30.	Rashidullah Yacoob	Deputy General Manager	Indo Suez Bank
31.	Christopher Michaud	Manager	Indo Suez Bank
32.	R. A. Chronowski	President	I.I. Power Inc.
33.	S.S. Jaffri	Chairman	Essesjay (Pvt) Ltd.,
34.	Q. A. Sheikh	President	Karachi Chamber Commerce
35.	A. S. Khatri	Vice President	Karachi Chamber Commerce
36.	Khawaja Dawood	Partner	Al-Khan Ltd.,
37.	Habibullah Khan Khattak	Chairman	Bibojee Group
38.	M. Basheer Jan Mohammad	President	Karachi Stock Exchange
49.	Asif Habib	Vice President	Karachi Stock Exchange
40.	Ferozuddin Cassem	Ex-President	Karachi Stock Exchange
41.	Arshad Bokhari	Managing Director	KESC
42.	Abdul Rauf Yousuf	Controller Finance	KESC
43.	Hashmi Abbas	Chief Engineer Projects	KESC
44.	Khalid Iqbal (Grid Stations)	Deputy Chief Engineer	KESC
45.	John P. Kadyszewski	Consultant	Bio Energy System Technology
46.	Junaid Makhdumi	Director,	Economic Engineering Co.

S.NO.	NAME	TITLE	ORGANIZATION
48.	Shabbir Makhdumi	Executive Director	Freyssinet Pak. Co.
49.	Pervaiz Makhdumi	President	Freyssinet Pak. Co.
50.	Michael B. Gerrard	Assistant Director	Morgan Grenfell Intl., London
51.	J.W.J. Hardy	Vice President	Union Texas Petroleum Pakistan. Inc.
52.	M. Arshad Waheed	Exec. Assist.	Pakland Cement
53.	Nasiruddin Mistry	G. M. (Coord)	Pakland Cement
54.	M.M. Abdullah	Senior Manager	Pakland Cement
55.	Saifullah Piracha	Managing Director	Sachal Sugar Mills
56.	Khalid Shafi	Managing Director	Reyaz-o-Khalid Co.

4941D:TAS

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Intermediate Credit Institution Qualification Statement

A. Applicant

1. Official name of institution: National Development Finance Corporation (NDFC)

2. Mail and Cable Address:
4th Floor, PNSC Building
Moulvi Tameezuddin Khan Road
Karachi
Pakistan
Cable: Term fund

3. Nature of Present Financial Operations

NDFC provides foreign currency and local currency loans to sponsors of industrial and commercial projects and ventures in Pakistan. All loans given to borrowers are made at commercial mark-up rates prevailing in the country.

4. Legal basis for institution: See Attachment I

5. Policy statement covering philosophy and method of operations:

NDFC was set up under the NDFC Act in 1973 as an autonomous corporation owned 100% by the GOP, primarily to finance projects in the public sector. However, since 1985, NDFC has been allowed by the GOP to fund private sector projects also. It follows a policy of funding all viable projects within the constrains of its resources, so as to maximize the rate of industrial development in the country.

6. Geographic area of operations: Pakistan

7. Description of the capitalization: See Attachment II

8. Balance sheets and profits and loss statements: See Attachment III

9. Organizational Structure of NDFC: See Attachment IV

10. Biographic data of Directors: See Attachment V

11. Biographic data of management officials: See Attachment VI

12 Detailed description of procedures for processing loan applications, monitoring loans, enforcing collection remedies, etc.

B. USAID Financing Request

1. Amount of Funds requested, estimate of time period of sub-loans:
(a) Amount of funds: $125 Million
(b) Time period during which these funds would be sub-loaned: 5-10 Years

The basis for this request is to provide financing for the development of the power sector by the commercial and private sector. The time period of 10 years is used as an initial phase of a possible long term project if the concept is proven to be feasible.

2. Amount of funds available to NDFC from agencies other than USAID: There will be other donor agencies providing funds to NDFC for the PSP Project, although NDFC has operations totalling over 11 billion rupees, USAID will establish a Fund in the amount of 125 million dollars which will be used as a financing pool with other donor funds.

3. Proposed use of USAID funds and credit-worthiness criteria which the NDFC will apply to screen subproject sponsors: USAID funds would be used to finance subprojects in the power sector in Pakistan using private sector firms and organizations as the main vehicle.

Applications for these sub-loans would be subjected to a uniform credit-worthiness criteria suggested below:

(i) Applicant cannot be an individual.
(ii) Applicant must be a private organization classified as either (a) A Limited company or (b) A registered partnership.
(iii) Applicant must have an established track record in business.
iv) Applicant must at least have a 25% equity participation in the cost of the sub-project which has been requested.
(v) Adequate security must be perfected before disbursing funds to the applicant.
(vi) An applicant must provide at least a 25% equity share in the cost of the subproject.
(vii) The subproject for which the loan is requested must fall in the category of a power generation project, as perceived by USAID and the PSP Window.
(viii) The period for the duration of the sub-loan shall not exceed 15 years from the date of first disbursement with a grace period of 5-8 years.
(ix) The cost reimbursement element in the subproject shall be determined on a case by case basis. The interest rate on the loan component shall be at commercial rates.

4. With respect to repayments, funds would return to the Fund at NDFC for use in future subproject financing.

5. Justification of the expected rate of interest to be payable to NDFC by the ultimate borrowers: No interest on principal will be payable USAID, as these are grant funds. The interest rate chargeable to ultimate borrowers would be at standard commercial rates and interest income will help to perpetuate the PSP Project.

(a) Any special technical assistance functions:
Technical assistance is explained in the Project Paper.
(b) Cost of attracting further resources:
Interest rates on foreign currency loans are 14%.
Mark-up on local currency loans is 15%.

(c) Adequacy of the project rate spread to serve as hedge against losses due to inflation:

N/A

(d) Provision for reserves against anticipated losses:

N/A

(e) Extent to which government subsidies will offset the foregoing costs:

N/A

C. Relationship of NDFC's Actual or Projected Activities to the Country's Overall Economic and Sector Development Requirements:

1. Present and projected demand within Pakistan for type of credit to be offered by NDFC:

This is the first time that such a sub-loan program has been proposed in the power sector in Pakistan.

(a) Investment over past several years:

N/A

(b) Estimated required annual investment over the next five years:

No definite figure is available, but it is strongly felt that the required annual investment in the next 5 years in the power sector in Pakistan, could reach hundreds of millions of dollars. Therefore between $15 and $25 million annually has been projected as the initial funding level.

(c) Scope and extent of other ICIs and commercial banks within Pakistan:

Extent of operations of commercial banks in the country are quite extensive. However, none of these are aimed at assisting the power sector in Pakistan in any appreciable manner.

D. Estimated Results of Proposed Financing

1. Anticipated contribution to development of both Pakistan and the power sector within which the applicant will operate:

Ten new power gentration subprojects will be financed through private sector sponsors which will improve the quality of life for Pakistan's populace.

2. Relation to the overall development of program of Pakistan: The PSP financing will provide a complementary effort to the GOP's endeavors for power sector development by involving the private sector in traditional public sector development activities.

3. Anticipated effect, if any, on the foreign exchange position of Pakistan: With the increased availability of electric power, it is anticipated that the economy of Pakistan will benefit by increased outputs in the industrial & agriculture sectors, allowing for increased exports of commercial items.

Attachment I

NATIONAL DEVELOPMENT FINANCE CORPORATION ACT, 1973
(Act No. XIII of 1973)

WHEREAS it is expedient to provide for the establishment of the National Development Finance Corporation, and for matters ancillary thereto:
It is hereby enacted as follows:

1. Short title, extent and commencement

(1) This Act may be called the National Development Finance Corporation Act, 1973.

(2) It extends to the whole of Pakistan and applies to the business of the Corporation transacted outside Pakistan and the persons conducting such business [1]

(3) It shall come into force at once, and shall be deemed to have taken effect on the 23rd day of December, 1972.

2. Definitions
In this Act [2] unless there is anything repugnant in the subject or context,

(a) "Board" means the Board of Directors constituted under Section 7;

(b) "Chairman" means the chairman of the Board;

(c) "Corporation" means the National Development Finance Corporation established under Section 3;

(d) "Director" means a director of the Corporation;

(e) "eligible enterprise" means an undertaking referred to in Section 17;

(f) "financial institutions" means the State Bank of Pakistan, the Pakistan Industrial Credit and Investment Corporation, the Investment Corporation of Pakistan, the National Investment Trust, a company carrying on the business of insurance and a banking company as defined in the Banking Companies Ordinance, 1962 (LVII of 1962) [, and includes any other company or other body corporate sponsored, owned or controlled by the Federal Government or Provincial Government, whether directly or through a company or corporation set up or, controlled by such Government, which the Federal Government may, by notification in the official Gazette, declare to be a financial institution for the purpose of this Act [3].

(g) "prescribed" means prescribed by rules;
(h) "regulation means a regulation made under this Act; and
(i) "rule" means a rule made under this Act.

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1. Added by Ordinance XIV of 1978, S.2
2. Subs. for word "Ordinance" by Ordinance XIV of 1978, S.3
3. Added by Ordinance XVI of 1983, S.2

4. Other relevant information and background: NDFC has a proven track record for disbursing and monitoring loans. The management of NDFC is eager to branch out into the financing of power sector subprojects. Because of the novelty of this concept, the administration of the financing by NDFC is anticipated to be extremely efficient thereby insuring the longevity of the PSP financing modality.

5. How will roll over funds be utilized and what restrictions if any, will exist regarding their use: Any and all roll over funds will be used to finance new subprojects through the PSP Project. NDFC will administer these funds as a distinct and separate loan pool from all other funds managed by NDFC.

E. Operations Projection

Explained in detail in the PP.

F. Other Sources of Financing

NDFC does have various lines of credits which have been used for financing of development projects in areas other than the power sector. NDFC does not currently have any other sources of financing for power sector development. As the PSP Project is executed, other donors, such as the World Bank, ADB, the Japanese government, ODA etc will also contribute funds to the Fund in NDFC for power generation subprojects.

3. Establishment of the Corporation

(1) The Federal Government may, in accordance with the provisions of this Act, establish a Corporation to be called the National Development Finance Corporation.

(2) The Corporation shall be a body corporate having perpetual succession and a common seal, with powers, subject to the provisions of this Act, to hold and dispose of property and shall by its name sue and be sued.

4. Share Capital

(1) The authorized share capital of the Corporation shall be ten crores of rupees, divided into ten lakh ordinary shares of one hundred rupees each.

(2) The paid-up capital of the Corporation shall, in the first instance, be three crores of rupees to be contributed by the Federal Government.

(3) The Federal Government may, by notification in the offical Gazette, increase the authorized share capital and [4] paid-up capital of the Corporation to such extent and in such manner as may be specified in the notification.

5. Offices and Branches

(1) Unless the Federal Government by notification in the official Gazette, otherwise directs, the head office of the Corporation shall be at Karachi.

(2) The Corporation may establish regional and other offices at such places as the Board may think fit.

6. Direction and Superintendence

(1) The overall direction and superintendence of the affairs of the Corporation shall vest in a Board of Directors constituted in accordance with Section 7, which may exercise; all such powers and do [5] all such acts and things as may be exercised and done by the Corporation.

(2) In discharging its functions, the Board shall act on business considerations.

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4. Ins by Ordinance XIV of 1978, S.4
5. Subs. for word "to" by Ordinance XIV of 1978 S.5

(3) In discharging its functions, the Board shall be guided on questions of policy by the instructions, if any, given to it by the Federal Government which shall be the sole judge as to whether a question is a question of policy.

(4) If the Board fails to carry out the instructions given to it under sub-section (3), the Federal Government may supersede the Board and appoint any person or body to function in place of the Board until a new Board is constituted in accordance with the provisions of this Act; and no such supersession or appointment shall be questioned in any court.

7. Board

(1) The Board shall consist of six persons to be appointed by the Federal Government, of whom two shall be from the financial institutions.

(2) The Directors shall hold office during the pleasure of the Federal Government.

(3) One of the Directors shall be nominated by the Federal Government to be the Chairman of the Board of Directors.

(4) No act or proceeding of the Board shall be invalid merely on the ground of the existence of any vacancy, or defect in the constitution, of the Board.

8. Chairman

(1) The Chairman shall be appointed by the Federal Government on such terms and conditions as the Federal Government may determine.

(2) The Chairman shall, unless the Federal Government otherwise directs, hold office for a term of three years which the Federal Government may, from time to time, extend.

(3) The Chairman shall be the whole time chief executive of the Corporation and shall perform such functions as are assigned by this Act or may be assigned by the Board: Provided that the Federal Government may utilize the services of the Chairman for any other work.

9. Qualifications and disqualifications of Directors

No person shall be, or shall continue to be, a Director who

(a) is or at any time has been adjudicated an insolvent or has suspended payment or has compounded with his creditors;

(b) is found to be a lunatic or becomes of unsound mind;

(c) is or has at any time been convicted for any offence which, in the opinion of the Federal Government, is an offence involving moral turpitude;

(d) without leave of absence from the Board absents himself from all the meeting of the Board for a continuous period of six months or, if less than three meetings are held within such period, from three consecutive meetings of the Board;

(c) is a salaried official of the Corporation, other than the Chairman.

10. Executive Committee

(1) The Board may constitute an Executive Committee consisting of the Chairman and two other Directors to assist it in the discharge of its functions under this Act.

(2) The members of the Executive Committee shall hold office for such period as may be provided by the regulations.

(3) The minutes of every meeting of the Executive Committee shall be laid before the Board for approval at its next meeting following the meeting of the Committee.

(4) Subject to the general or special directions of the Board, the Executive Committee may deal with any matter within the competence of the Board.

11. Meeting of the Board and Executive Committee

(1) Three Directors shall form the quorum for a meeting of the Board:

(2) Subject to sub-section (1), the meetings of the Board and the Executive Committee shall be held in such manner as may be prescribed: Provided that, until rules are made in this behalf, such meetings shall be called by the Chairman.

12. Fees for Attending Meeting

The Directors shall be paid such fees for attending the meeting of the Board and the Executive Committee as may be prescribed.

13. Secrecy and Fidelity

No Director shall assume his office until he has made such declaration of secrecy and fidelity as may be prescribed.

14. Indemnity of Directors

A Director shall not be personally responsible for the acts of any other Director or of any officer or servant of the Corporation or for any loss or expenditure resulting to the Corporation by reason of the insufficiency or deficiency in value of or title to any property or security acquired or taken on behalf of the Corporation, or for anything done by him in good faith in the discharge of his duties.

15. Business which the Corporation can Transact

Subject to the rules and regulations, if any, the Corporation may carry on, transact or do the several kinds of business and acts hereinafter specified namely:

(a) to appraise the economic, financial and technical feasibility of eligible enterprises which make a request for assistance;

(b) to subscribe to the equity capital of eligible enterprises;

(bb) to promote, sponsor, form and get incorporated one or more companies having against its or their objects the furtherance of the business and objects of the Corporation; [1]

(c) to make loans and advances, and provide lease financing, to eligible enterprises and to financial institutions on short, medium and long-term basis, and to provide assistance for working capital requirements;[1]

(d) notwithstanding the provision of any other law to the contrary, to appoint a director on the Board of Directors of a company to which it has rendered financial assistance;

(e) to guarantee loans and advances granted to the eligible enterprises;

(f) to participate with other financial institutions or with the approval of the Federal Government with banks or lending agencies outside Pakistan, [2] in granting loans and advances to the eligible enterprises;

(g) to purchase or otherwise acquire, own, sell, transfer and exchange any tangible and intangible, movable or immovable property or assets in the discharge of its business;

(h) to accept and furnish any lien, charge, hypothecation, or mortgage or any tangible or intangible, movable or immovable property or assets in the discharge of its business;

(i) to enter into agreements and contracts and execute such documents as may be considered necessary for the discharge of its functions;

(j) to receive and pay commissions, fees and brokerage in connection with its business;

(k) to invest its surplus funds in securities in the manner prescribed;

(l) to acquire, retain, or dispose of assets of any type which may in any way come into the possession of the Corporation in satisfaction or part satisfaction of any of its claims;

(m) to borrow money for the purpose of its business and to give security for money so borrowed by pledging assets or otherwise.

(n) to accept deposits of fixed maturities;

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1. Ins. by Ordinance XVI of 1983 S. 3 (a). 3(b) for "(c) to make loans and advances to eligible enterprises, on medium and long term basis, and to provide assistance for working capital requirement;"
2. Ins. by Ordinance XIV of 1978, S. 6
3. Subs. by Ordinance XVI of 1983, S. 4(a) for "(a) undertakings which are wholly or partly owned by the Federal Government";

(o) to acquire, maintain and transfer its residential and business premises; and

(p) generally to do all such matters and things as may be incidental or subsidiary to the undertaking of any of the aforesaid business.

16. Business which the Corporation cannot Transact

The Corporation shall not invest in any share, stocks or debentures of, or make loans or advances to, any undertaking which is not an eligible enterprise: Provided that the Corporation may deposit its funds with a banking company in current or short-term deposit accounts.

17. Eligible Enterprises

The following shall be eligible to receive assistance from the Corporation namely:

(a) undertakings which are wholly or partly owned by the Federal Government, a Provincial Government or a local authority; [3]

(b) undertakings which are wholly or partly owned by any of the undertakings referred to in clause (a), and [4]

(bb) undertakings in the private sector, in particular those set up and established in the less developed areas of Pakistan; [5]

(c) any other undertaking declared by the Federal Government to be an eligible enterprise for the purpose of this Act.

18. Borrowing Power

(1) The Corporation may borrow from the Federal Government and, with the prior approval of the Federal Government also from the State Bank of Pakistan or any other lending agencies or institutions. [6]

(2) The Corporation may issue and sell bonds and debentures both in rupees and foreign currencies.

(3) The Federal Government may, at the request of the Corporation, guarantee as to the repayment of principal and payment of interest any sums borrowed by the Corporation under sub-section (1) or any bonds or debentures issued by the Corporation with the prior approval of the Federal Government.

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4. Subs. by Ordinance XIV of 1978, S.7 for "(b) undertakings taken over managed by the Federal Government under the Economic Reforms Order, 1972; and"
5. Ins. by Ordinance XVI of 1983, S.4(b)
6. Subs. by Ordinance XIV of 1978, S. 8(a) for "(1) The Corporation may with the prior approval of the Federal Government, borrow from the State Bank of Pakistan or any other lending agencies or institutions"

(4) Notwithstanding anything contained in the Trusts Act, 1982 (II of 1982), the Insurance Act, 1938 (IV of 1938), and the Banking Companies Ordinance, 1962 (LVII of 1962) such of the bonds and debentures of the Corporation as have been guaranteed by the Federal Government under sub-section (3) shall be deemed to be included among the securities enumerated in section 20 of the Trusts Act, 1882 (II of 1882), and to be approved securities for the purposes of the Insurance Act, 1938 (IV of 1938), and the Banking Companies Ordinance, 1962 (OVII of 1962).

(5) The aggregate of the sums borrowed under sub-section (1) and the sums due on the bonds and debentures issued under sub-section (2) and the contingent liabilities of the [Corporation]1 in respect of guarantee or underwriting agreements shall not at any time exceed twenty times the aggregate of the amount of paid-up share capital and reserves of the Corporation.

19. Power to Call for Payment Before Agreed Period

Notwithstanding any agreement to the contrary, the Corporation may, by notice require any eligible enterprise to which it has granted any loan forthwith to repay the loan in full, if

(a) it appears to the Board that in the application for the loan information false and misleading in any material particular has been given; or

(b) the eligible enterprise has failed to comply with the terms of any agreement with the Corporation in the matter of the loan; or

(c) for any other reason, it is necessary, in the opinion of the Board, to protect the interest of the Corporation.

20 Delegation of Powers

The Board may, for the purpose of ensuring efficient functioning of the Corporation and facilitating transaction of its daily business, by a resolution published in the official Gazette, delegate to the Chairman or any other officer of the Corporation, subject to such conditions and limitations, if any, as may be specified therein, such of its powers and duties under this Act as it may deem necessary.

21. Officers and Servants*

The Corporation may appoint or employ such officers and servants as it considers necessary for the efficient performance of its functions, on such terms and conditions as may be laid down by regulations.

22. Disposal of Profits

(1) The Corporation shall establish a Reserve Fund to which shall be credited such amount out of its annual net profit, not being less than fifty per cent, of its annual net profit, as may be determined by the Board.

(2) The minimum appropriation of profits to Reserve fund fixed under sub-section (1) shall apply till such time as the amount in the Reserve fund equals the paid-up capital of the Corporation.

23. Accounts and Audit

(1) The year of account of the Corporation shall be the year commencing the first day of January and ending the thirty-first day of December.

(2) Subject to sub-section (1), the Corporation shall maintain its accounts in such manner as may be prescribed.

(3) The accounts of the Corporation shall be audited by two auditors who are chartered accountants within the meaning of the Chartered Accountants Ordinance, 1961 (X of 1961), appointed by the Corporation.

(4) The Corporation shall submit to the Federal Government a copy of its audited annual accounts and the report of the Board on the operations of the Corporation for the preceding year, including a report on the performance of the undertakings to which it has subscribed capital or advance advanced loans or on whose behalf it has undertaken any guarantee.

(5) The Federal Government shall cause the audited accounts of the Corporation to be laid before the National Assembly.

24. Exemption from Taxes

Notwithstanding anything contained in the Income Tax Act, 1922 (XI of 1922), the Health Tax Act, 1963 (XV of 1963), the Business Profits Tax Act, 1947 (XXI of 1947), or any other law for the time being in force relating to income-tax, super-tax, wealth-tax, gift-tax or business profits tax, the Corporation shall not be liable to pay any such tax on its income, profits or gains.

25. Corporation not to be Banking Company

The Corporation shall not be deemed to be a banking company for the purposes of the Banking Companies Ordinance, 1962 (LVII of 1962), or any other law for the time being in force relating to banking companies.

26. Liquidation of the Corporation

The Corporation shall not be wound up save by order of the Federal Government in such manner as it may direct.

27. Power to Make Rules

(1) The Federal Government or, subject to the approval of the Federal Government, the Board may, by notification in the official Gazette, make rules for carrying out the purposes of this Act.

(2) All such rules shall be laid before the National Assembly.

28. Power to Make Regulations

(1) The Board may make regulations to provide for all matters not required to be provided for by rules and provision for which is necessary or expedient for carrying out the purposes of this Act.

(2) Where any provision of the regulations is inconsistent with any provision of the rules the provision of the rules shall prevail.

29. Repeal

The National Development Finance Corporation Ordinance, 1972 (LVIII of 1972), is hereby repealed.

Attachment II
Financial Highlights
(Rs. in Million)

Year Ending

December 31,	1980	1981	1982	1983	1984	1985	1986
Resources	2,937	4,169	5,554	7,933	9,612	11,230	25,290
Total Assets	2,571	3,147	4,251	5,939	6,767	9,523	12,849
Credit Volumes	1,982	2,306	3,411	3,741	5,158	6,753	8,564
Deposits	1,327	1,568	2,008	3,101	3,374	4,739	6,718
NDFC Bonds	-	-	100	200	200	200	200
Capital & Reserves	350	412	489	603	725	875	996
Foreign Credit Lines	594	1,354	1,702	2,547	3,431	3,339	4,132
State Bank Credit Lines	535	685	1,185	1,482	1,882	2,068	3,124
Total Operating Income	255	292	420	619	726	927	1,266
Net Income	86	88	122	162	190	244	300
Dividends	12.6	13.2	19.8	26.4	26.4	26.4	9.24
Staff (No.)	197	212	258	372	511	547	564

Note: Foreign currency resources are gross of repayments.

Attachment III

BALANCE SHEET AS AT DECEMBER 31, 1985

The Auditors' report dated April 8, 1986 is attached hereto

CAPITAL AND LIABILITIES	NOTE	1986 Rupees	1985 Rupees
CAPITAL AND RESERVES			
Authorised Capital		200,000,000	200,000,000
2,000,000 ordinary shares of Rs.100/- each			
Issued, subscribed and paid up capital			
Ordinary shares of Rs.100/-each			
1,200,000 fully paid in cash		120,000,000	120,000,000
120,000 fully paid bonus shares		12,000,000	12,000,000
		132,000,000	132,000,000
Statutory reserve	3	615,098,102	526,000,000
Special reserve	4	40,000,000	-
General reserve	5	-	12,000,000
Reserve for contingencies	6	63,410,163	88,286,382
Bonds redemption reserve		145,000,000	166,000,000
Unappropriated profit		-	460,800
		995,508,265	874,747,182
BONDS	7	200,000,000	200,000,000
DEPOSITS OF FIXED MATURITIES		6,748,159,280	4,739,235,473
BORROWINGS	8 & 15	3,982,360,552	3,161,584,678
OTHER LIABILITIES AND PROVISIONS			
Dividends		35,640,000	46,209,000
Interest/Return and expenses accrued		607,161,635	432,897,972
Sundry creditors		23,959,123	17,405,403
Provision of taxation		123,000,000	-
Other	9	133,159,650	50,596,816
		922,920,408	547,100,191
OUTSTANDING COMMITMENTS AND CONTINGENT LIABILITIES	10		
		12,848,948,505	9,522,667,524
ACCEPTANCES PAYABLE PER CONTRA		1,291,433,338	1,010,140,310

PROPERTY AND ASSETS	NOTE	1986 Rupees	1985 Rupees
CASH			
With banks, in transit and on hand	11	1,131,114,312	1,024,553,912
INVESTMENTS	12		
Quoted			
Government Securities (market value Rs. 1,313,162,169 1985: Rs.99,454,368)		1,313,128,019	100,580,989
Shares fully paid (market value Rs. 195,712,003 1985: Rs. 160,517,301)		93,094,449	70,292,809
		1,406,222,468	170,873,798
Unquoted			
Government Treasury Deposit Receipts		368,253,600	786,741,780
Shares fully paid		166,726,310	143,887,630
Debentures		15,011,703	15,175,222
		549,991,613	945,804,632
		1,956,214,081	1,116,678,430
ADVANCES, LOANS AND DEBENTURES	13, 14 & 15	9,053,684,006	7,017,976,241
OTHER ASSETS			
Deposits, prepayments, deferred costs and sundry receivables	16	326,996,820	159,924,839
Income accrued and receivable		210,191,924	75,977,980
		537,188,744	235,902,819
ADVANCES FOR CAPITAL WORK-IN-PROGRESS	17	75,475,078	64,588,190
FIXED ASSETS	18	95,272,284	62,967,899
		12,848,948,505	9,522,667,521
ACCEPTANCE RECEIVABLE PER CONTRA		1,291,443,338	1,010,140,310

The annexed notes form an integral part of the accounts

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1985.
The Auditors' report dated April 16, 1987 is annexed hereto.

	NOTE	1986 Rupees	1985 Rupees
INCOME			
Interest/Return * and charges on advances, loans and debentures (less advances and loans written off)		881,438,007	673,330,591
Interest/Return* on bank/PLS deposits		88,138,300	35,856,222
Interest/Return* from investments		180,238,868	134,426,575
Fees, commission and exchange		115,855,059	82,801,997
Profit on sale of investments		88,610	6,165
Profit on disposal of fixed assets		211,272	354,108
Total Income		1,265,970,116	926,775,661
EXPENDITURE			
Interest/Return* commitment and other charges		866,948,814	602,749,359
Establishment and administrative expenses		47,921,275	38,665,277
Directors' allowances		2,510	5,200
Other operating expenses	19	38,061,469	32,499,614
Depreciation on fixed assets	19	13,158,746	9,839,329
Total Expenditure		966,092,814	683,758,779
Profit for the year before provisions for taxation Contingencies and loans/receivables (note 6)		299,877,302	243,016,882
Less: Provision for taxation Current			
- for the year		70,000,000	-
- for prior year		53,000,000	-
		123,000,000	-
		176,877,302	243,016,882
Unappropriated profit brought forward		460,800	843,918
		177,338,102	243,860,800
APPROPRIATIONS			
Transfer to statutory reserve		89,098,102	121,000,000
Transfer to special reserve for prior year	4	17,000,000	-
Transfer to special reserve for current year	4	23,000,000	-
Transfer (from)/to general reserve	5	(12,000,000)	12,000,000
Transfer to reserve for contingencies		22,000,000	55,000,000
Transfer to bonds redemption reserve		29,000,000	29,000,000
Dividends		9,240,000	26,400,000
		177,338,102	243,400,000
Balance carried forward		-	460,800

*Return includes income from or as the case may be paid on, non-interest bearing accounts.

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED DECEMBER 31, 1986

1. The Corporation is governed by the National Development Finance Corporation (Act, 1973 and the rules made thereunder, in accordance with which these accounts have been presented.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

2.1 The financial statements are prepared under the historical cost convention.

2.2 Through Finance Act, 1986 the Federal Government of Pakistan has amended the Corporation's Act and thereby tax exemption status has been withdrawn effective from January 1, 1985.

In view of the fact that the Corporation is being assessed for tax for the first time and that too retro-actively, provision for taxation is being made in these accounts on an estimated basis. A definitive policy for taxation, including deferred, will be formulated in the ensuing year after determining allowability of certain charges.

2.3 The Corporation operates a gratuity scheme for its staff and provisions are made to meet the obligations under the scheme on the basis of the respective monthly salaries as at the end of the year in respect of those employees only, who have completed the minimum qualifying period of service.

2.4 Assets and liabilities in foreign currencies are generally translated at the highest selling rates of the respective currencies, prevalent at the balance sheet date, except for the Corporation's borrowings from the International Development Association which have been translated at the State Bank of Pakistan spot rate, and Deposits of Fixed Maturities (for which the Corporation purchases forward exchange contracts) which are translated at rates applicable on the transaction dates.

Gains and losses on translation are taken to income currently.

2.5 Cheques pending realisation as of the balance sheet date received from its constitutents, in settlement of their obligations to the Corporation, or for the issue of deposit receipts have been treated as cash with bank with the corresponding credit being carried under other liabilities and provisions - others, or deposits of fixed maturities respectively.

2.6 Dependent upon its constituents' requirements, and/or pending completion of final security documentation, in certain instances the constitutent' loan accounts are debited with the agreed loan amount, with a corresponding credit to the respective clients' deposit accounts. In the latter case these deposits are, with mutual consent, treated as the interim security for the loan. This interim arrangement terminates when the security documentation is finalized.

2.7 Fixed Assets are stated at cost less accumulated depreciation. Depreciation is charged to income applying the straight line method whereby the cost of the asset is written off over its estimated service life.

Gains and losses on disposal of Fixed Assets are included in income currently.

2.8 The Corporation acquires Government Securities for specified periods of time on the expiry of which the original holders have the option to buy them back at contracted rates. Some of the items so acquired and some of the Corporation's own holdings are sold to others, with the Corporation retaining the option to buy them back at the end of specified periods of time at contracted rates.

The accounting treatment accorded to these transactions upon origination, is consistent with purchase and sale of investments although:

(i) in the case of purchases, whilst the legal registration may continue to be in the name of the seller to whom the related interest may also belong, the seller recognizes and admits the Corporation to be the true and absolute owner; and

(ii) in the case of sales, whilst the Corporation may recognize and admit the purchaser to be the true and absolute owner, the income may continue to belong to the Corporation.

2.9 Interest/Return earned is recognized on a time proportion basis taking account of the principal outstanding and the rates of Interest/Return applicable, except where recovery is considered doubtful the income is recognized on receipt basis.

Mark-up payable to State Bank of Pakistan on the amounts utilised out of the lines of credit provided under refinance arrangements by the bank is charged in the accounts on a time proportion basis taking account of the principal outstanding and the mark-up applicable.

Profit/Loss on Profit and Loss Sharing (PLS) deposits is recognized currently on the basis of the applicable rate declared bi-annually, subsequent to each calendar half year, for deposits held during the respective half year.

Income from equity investments is recorded only if declared by the relevant company before the balance sheet date of the Corporation.

No accruals are made for fees for project examination and consortium leadership, commitment fees and additional/penal interest in respect of credit/loans granted by the Corporation which are recorded as income when realised.

2.7 Fixed Assets are stated at cost less accumulated depreciation. Depreciation is charged to income applying the straight line method whereby the cost of the asset is written off over its estimated service life.

Gains and losses on disposal of Fixed Assets are included in income currently.

2.8 The Corporation acquires Government Securities for specified periods of time on the expiry of which the original holders have the option to buy them back at contracted rates. Some of the items so acquired and some of the Corporation's own holdings are sold to others, with the Corporation retaining the option to buy them back at the end of specified periods of time at contracted rates.

The accounting treatment accorded to these transactions upon origination, is consistent with purchase and sale of investments although:

(i) in the case of purchases, whilst the legal registration may continue to be in the name of the seller to whom the related interest may also belong, the seller recognizes and admits the Corporation to be the true and absolute owner; and

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2.9 Interest/Return earned is recognized on a time proportion basis taking account of the principal outstanding and the rates of Interest/Return applicable, except where recovery is considered doubtful the income is recognized on receipt basis.

Mark-up payable to State Bank of Pakistan on the amounts utilised out of the lines of credit provided under refinance arrangements by the bank is charged in the accounts on a time proportion basis taking account of the principal outstanding and the mark-up applicable.

Profit/Loss on Profit and Loss Sharing (PLS) deposits is recognized currently on the basis of the applicable rate declared bi-annually, subsequent to each calendar half year, for deposits held during the respective half year.

Income from equity investments is recorded only if declared by the relevant company before the balance sheet date of the Corporation.

No accruals are made for fees for project examination and consortium leadership, commitment fees and additional/penal interest in respect of credit/loans granted by the Corporation which are recorded as income when realised.

7. BONDS

The Corporation issued Bonds of Rs.200 million (in 1981 Rs. 100 million and 1983 Rs. 100 million) guaranteed by the Government of Pakistan, carrying interest @ 10% per annum payable semi-annually. The principal is repayable in lump-sum at the expiry of seven years from the date of issuance.

8. BORROWINGS

	1986 Rupees	1985 Rupees
8.1 Local Currency Loans and Credits		
a State Bank of Pakistan		
Refinance Credits for locally fabricated machinery		
(i) For local sale against international tenders	-	16,111,000
(ii) For export	114,332,845	151,696,309
(iii) For other local sale	1,848,837,605	1,373,176,456
Long Term Loan	351,562,500	205,000,000
	2,314,732,950	1,728,983,765
8.2 Foreign Currency Loans and Credits		
(a) Repayable in terms of foreign currency		
(i) International Development Association, Credit	58,919,005	89,051,587
(ii) Asian Development Bank, First Loan	265,972,642	262,769,570
(iii) Temporary Overdrafts (letters of credit negotiated by foreign correspondent banks)	10,624,960	6,658,467
(b) Repayable in terms of local currency		
(i) Asian Development Bank, Second Loan	633,169,229	613,684,507
(ii) Asian Development Bank Third Loan	165,172,377	17,784,980
(iii) International Development Association Credit, and International Bank for Reconstruction and Development, Loan	241,113,449	152,788,220
(iv) French Protocol Credits	292,655,940	289,863,582
	3,982,360,552	3,161,584,678

8.1 Local Currency Loans and Credits

(a) State Bank of Pakistan:

Refinance Credits for locally fabricated machinery:

(iii) For other local sale:

The Corporation has obtained 26(1985: 23) lines of credit totalling Rs.2,805 million (1985: Rs. 1,905 million) from the State Bank of Pakistan for refinance of suppliers credits for the procurement of locally fabricated machinery and equipment; out of which 4 (1985: 2) lines totalling Rs. 140 million (1985: Rs. 60 million) were fully repaid till December 31, 1986.

Long Term Loans:

The Corporation has also taken Long Term Loans of Rs. 355,000,000 (1985: Rs. 205,000,000) from State Bank of Pakistan. These loans are guaranteed by the Government of Pakistan and are repayable within 10 years in equal half yearly instalments after a grace period of two years from the date of disbursement. The principal amount repaid to the State Bank of Pakistan till December 31, 1986 was Rs. 3,437,500.

Demand Loan:

The Corporation also has a demand loan credit line of Rs. 50 million (1985: Rs. 50 million) from the State Bank of Pakistan against deposit of Government Treasury Deposit Receipts of Rs. 56 million (1985: Rs. 55 million).

(b) Muslim Commercial Bank

The Corporation has also an arrangement with Muslim Commercial Bank for accommodating its cheques upto Rs. 30 million (1985: Rs. 9 million) against Bearer National Fund Bonds of the Corporation of Rs. 50 million (1985 against the Corporation's deposits with the Bank).

8.2 Foreign Currency Loans and Credits

(a) Repayable in terms of foreign currency

(i) International Development Association, Credit:

The Corporation has utilised U.S. dollars 29,491,962 (1985: U.S. dollars 29,491,962) of a foreign currency line from the International Development Association as the designee of the Government of Pakistan.

Under the terms of the Subsidiary loan agreement between the Government of Pakistan and the Corporation, the loan is repayable in Pakistan Rupee equivalent of the amount of foreign currency withdrawn. The principal amount repaid to the Government as per the terms of the agreement amounted to U.S. dollars 26,076,368 (1975: U.S. dollars 23,919,272).

The payment of interest to the Government of Pakistan is to be made in equivalent Rupees as per the terms of the agreement, expressed in foreign currency.

(ii) Asian Development Bank, First Loan:

The Corporation has utilised a foreign currency line of credit (guaranteed by the Government of Pakistan) from the Asian Development Bank, which the bank has lent in various currencies equivalent to U.S. dollars 27,808,572 (1985: U.S. dollars 27,808,572) at the rates prevalent on the disbursement dates.

Under the terms of the loan agreement between the bank and the Corporation, the loan is repayable in the respective currencies withdrawn from the loan account. The principal amount repaid to the bank in various currencies was equivalent to U.S. dollars 13,583,584 till December 31, 1986 (1985: U.S. dollars 10,413,128).

(b) Repayable in terms of local currency

(i) Asian Development Bank, Second Loan:

The Government of Pakistan has re-lent to the Corporation an Asian Development Bank Loan of U.S. dollars 50 million (1985: U.S. dollars 50 million (1985: U.S. dollars 50 million). The amount of loan utilised till December 31, 1986 including letters of credit negotiated before the year end pending disbursement by the Asian Development Bank were equivalent to U.S. dollars 45,296,311 equivalent to Rs. 670,245,947 (1985: U.S. dollars 41,881,968 equivalent to Rs. 613,684,507).

The loan is repayable within 15 years to the Government in Pakistan Rupees determined at the foreign exchange rate prevailing on the date of withdrawal/disbursement. The principal amount repaid to the Government of Pakistan was Rs. 37,076,718 till December 31, 1986.

(ii) Asian Development Bank, Third Loan:

The Government of Pakistan has re-lent to the Corporation an Asian Development Bank loan in various currencies equivalent to U.S. Dollars 45 million (1985: U.S. dollars 45 million). The amount of loan utilised till December 31, 1986 including letters of credit negotiated before the year end pending disbursement by the bank were equivalent to U.S. dollars 10,101,113 equivalent to Rs. 165,172,377 (1985: U.S. dollars 1,111,372 equivalent to Rs. 17,784,980).

The loan is repayable within 15 years to the Government in Pakistan Rupees determined at the foreign exchange rate prevailing on the date of withdrawal/disbursement.

(iii) International Development Association Credit, and International Bank for Reconstruction and Development, Loan:

The Government of Pakistan has re-lent to the Corporation an International Development Association Credit and International Bank for Reconstruction and Development loan of an amount in various

currencies equivalent to U.S. dollars 15 million and will further relend such additional amounts as may be allocated to the Corporation in terms of the respective agreement. The amount of loan utilised till December 31, 1986 including letters of credit negotiated before the year end pending disbursements were equivalent to U.S. dollars 14,310,180 equivalent to Rs. 241,113,449 (1985: U.S. dollars 9,274,090 equivalent to Rs. 152,788,219).

The loan is repayable within 15 years to the Government in Pakistan Rupees determined at the foreign exchange rate prevailing on the date of withdrawal/disbursement.

(iv) French Protocol Credits:

The Government of Pakistan has re-lent to the Corporation under the standard terms issued by the Government, French Protocol Credits of French Frances 171,623,000 (1985: French 171,623,000) for financing certain specific projects. The amount of loan utilised till December 31, 1986 was French Francs 167,159,249 equivalent to Rs. 292,655,940 (1985: French Francs 165,937,409 equivalent to Rs. 289,863,582).

These credits are repayable within 15 years to the Government in Pakistan Rupees determined at the foreign exchange rate prevailing on the date of withdrawal/disbursement.

(v) International Bank for Reconstruction and Development, Second Loan:

The Government has agreed to allocate/re-lend to the Corporation and other financial institutions, on a first come first served basis, part of the proceeds of an International Bank for Reconstruction and Development, Loan of amounts in various currencies equivalent to U.S. dollars 148 million.

The loan will be repayable over 15 years to the Government of Pakistan in Pakistan Rupees determined at the foreign exchange rate prevailing on the date of withdrawal/disbursement.

(vi) Asian Development Bank, Fourth Loan:

The Government has agreed to allocate/re-lend to the Corporation and other financial institutions, on a first come first served basis, part of Asian Development Bank Loan of amounts in various currencies equivalent to U.S. dollars 50 million and SDR 46.4 million respectively.

The loan will be repayable over 15 years to the Government of Pakistan in Pakistan Rupees determined at the foreign exchange rate prevailing on the date of withdrawal/disbursement.

No withdrawals were made from this loan as of December 31, 1986.

9. OTHER LIABILITIES AND PROVISIONS - OTHERS

	1986 Rupees	1985 Rupees
Provision for gratuity	1,959,280	1,714,869
Repayments of loans inclusive of related cheques under clearance)	48,115,477	5,121,208
Miscellaneous	83,084,893	43,760,739
	133,159,650	50,596,816

10. OUTSTANDING COMMITMENTS AND CONTINGENT LIABILITIES

For advances, loans and debentures	2,450,452,725	1,475,490,395
For letters of credit	792,600,296	895,305,758
For guarantees issued	369,123,049	210,893,446

11. CASH

	1986 Rupees	1985 Rupees
11.1 With Banks		
On time and call deposits	1,001,358,236	951,909,563
On current accounts and in transit	129,079,507	69,363,373
On hand	676,569	281,006
	1,131,114,312	1,021,553,924

11.2 At December 31, 1986 the amounts of cheques referred to in note 2.5 totalling Rs. 77,022,341 (1985: Rs. 28,531,654) are included in cash with banks on current accounts.

12. INVESTMENTS

12.1 Quoted shares/certificates fully paid		
At cost		
(i) Shares of joint stock companies	64,838,692	42,037,052
(ii) Certificates of State Enterprise Mutual Fund	22,933,080	22,933,080
(iii) Modarba Certificates	6,000,000	6,000,000
	93,771,772	70,970,132
Less: Provision for contingencies	677,323	677,323
	93,094,449	70,292,809

12.1 (i) This includes the Corporation's investment of Rs. 11,000,000 in National Development Leasing Corporation Limited.

			At Cost
12.2	Unquoted shares fully paid		
	180,298,630	144,387,630	
	Less: Provision for contingencies (Note 6)	13,572,320	500,000
		166,726,310	113,887,630

This includes the Corporation's investment of Rs. 5,000,000 in B.R.R. Investment Services Limited, Rs. 25,000,000 in Regional Development Finance Corporation and Rs. 5,000,000 in Asian Leasing Corporation.

12.3 The actual share scrips in respect of quoted shares of Rs. 32,703,200 and unquoted shares of Rs. 66,313,500 have as yet to be received from the related companies. However, confirmations from the respective companies of the share subscriptions by the Corporation in respect of these shares have been obtained.

13. ADVANCES, LOANS AND DEBENTURES	1986 Rupees	1985 Rupees
(i) Working Capital Financing	2,336,494,869	1,675,708,496
(ii) Term Financing	6,203,499,650	5,052,859,440
(iii) Lease Financing	21,473,371	20,141,257
(iv) Debentures	2,845,831	3,824,688
	8,564,313,721	6,752,533,881
Accrued interest/return thereon	697,036,809	439,304,988
	9,261,350,530	7,191,838,869
Less: Provision for contingencies (Note 6)	207,666,524	173,862,625
	9,053,684,006	7,017,976,244

13. (iii) The Corporation has entered into vehicle leasing transactions through an agent on the basis of an arrangement whereby the agent is required to pay a fixed rate of return (net of all charges and expenses) on the disbursements (net of repayments received) made by the Corporation in respect of such transactions. The leasing agreements entered into by the agent on behalf of the Corporation have been treated by the Corporation as finance leases.

14. The Corporation, upon instructions of the Government of Pakistan, has transferred the loan risk of principal amount of Rs. 150 million to Bankers Equity Limited in respect of one of the projects financed from the French Protocol Credit of French Francs 112.5 million. The total loan disbursed out of this credit upto December 31, 1986 was French Francs 112,490,000 equivalent to Rs. 197,151,774 (1985: French Francs 112,490,000 equivalent to Rs. 197,151,774) which has been treated as the asset of the Corporation and loan risk charges on the amount outstanding are being accrued thereon proportionately.

15. The Corporation, after due intimation to the Government of Pakistan, has made deductions from repayments (in respect of the loan from the International Development Association) to the Government, to recover overdue instalments and charges relating to loans (guaranteed by the Government) granted by the Corporation to its constitutents. The amounts stated in the Balance Sheet under Advances, Loans and Debentures and under Borrowings, are net of these deductions.

At December 31, 1986 the recoveries of principal and charges through such deductions amounted to Rs. 72,403,745.

During 1984, the Corporation, with the concurrence of the Government of Pakistan for arranging the issuance of special Participation Term Certificates by one of its constituents in favor of the Government, had adjusted an amount of Rs. 3,720,000 against its borrowings from the Government on account of International Development Association Credit.

16. DEPOSITS, PREPAYMENTS, DEFERRED COSTS AND SUNDRY RECEIVABLES

	1986 Rupees	1985 Rupees
At December 31	327,188,958	160,116,977
Less: Provision for contingencies	192,138	192,138
	326,996,820	159,921,839

Included in the above are deferred costs of Rs. 1,839,483 (1985: Rs. 2,707,483) which comprise of Rs. 1,558,600 (1985: Rs. 2,226,600) (net of premium received) relating to issuance of Bonds of Rs. 200 million (in 1981 Rs. 100 million and 1983 Rs. 100 million) which is being amortized over the period of the Bonds and Rs. 280,883 (1985: Rs. 480,883) relating to Research and Development activities which will be amortized by 1987.

17. ADVANCES FOR CAPITAL WORK-IN-PROGRESS

In 1983, the Corporation entered into a joint venture agreement with eleven other institutions for the construction of a commercial complex named, "Finance and Trade Center" at Karachi. The project will be owned by the joint venture holders proportionate to their contributions. The Corporation's commitment works out at Rs. 61.28 million (13% of the total joint venture cost) approximately. The full commitment amount of Rs. 61,279,556 has been advanced (1985: Rs. 58, 774,005) till December 31, 1986.

18. FIXED ASSETS

COST	1986 Rupees	1985 Rupees
Land and Premises	64,513,740	37,655,444
Furniture, Fixtures, Equipment and Vehicles	65,444,124	47,981,615
	129,957,864	85,640,059
Accumulated Depreciation		
Premises	(4,654,582)	(2,881,230)
Furniture, Fixtures, Equipment and Vehicles	(30,030,998)	(19,790,930)
	(34,685,580)	(22,627,160)
Book Value	92,272,284	62,967,899

The cost of Fixed Assets of the Pakistan Development Banking Institute (a wing of the Corporation) has been shown net of the contributions of Rs. 3,355,136 (1985: Rs. 3,355,136) by the Pakistan Banking Council and other financial institutions.

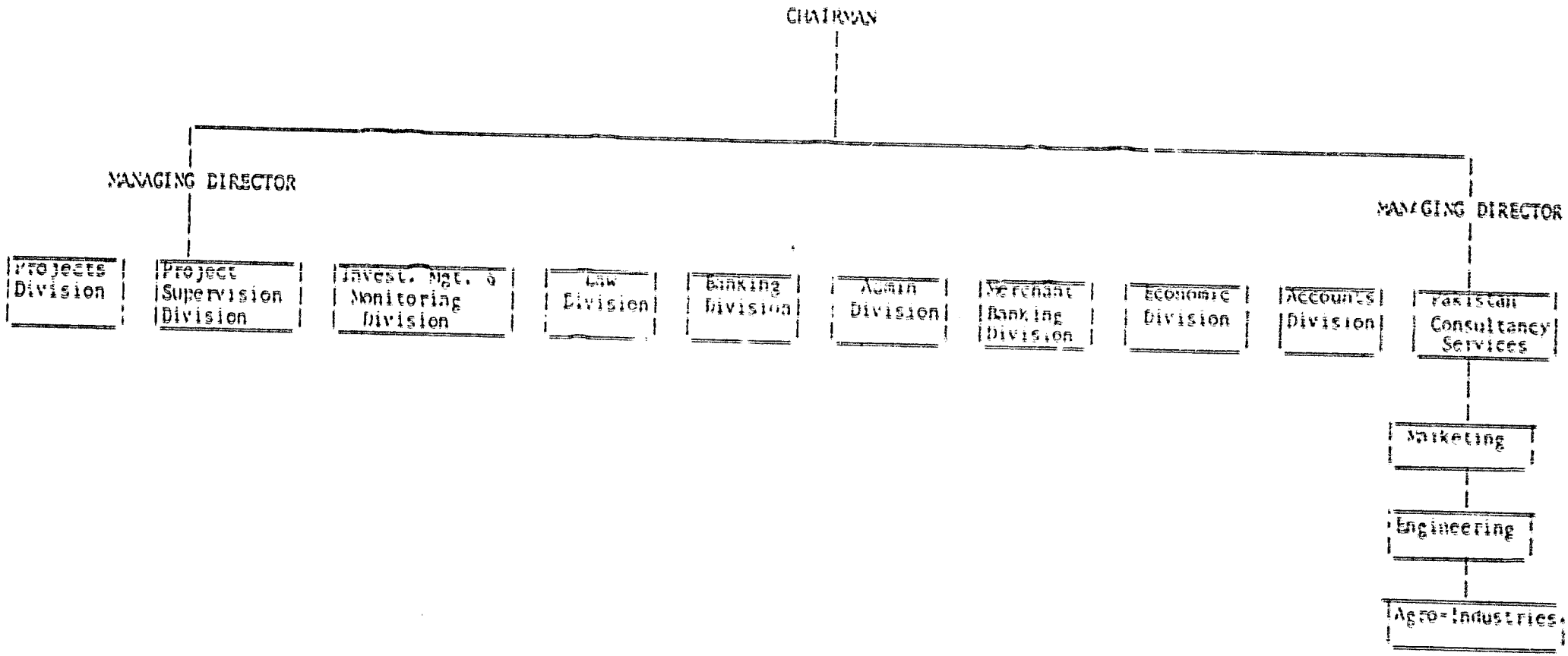
19. OTHER OPERATING EXPENSES AND DEPRECIATION ON FIXED ASSETS

Included in the above is the Corporation's contribution of Rs. 5,969,523 (Description expenses Rs. 1,152,137 and other operating expenses Rs. 4,817,386) towards Pakistan Consultancy Services' revenue expenditure which is functioning as in independent consultancy/research organ of the Corporation.

20. Prior year figures have been rearranged for the purposes of comparison where-ever necessary.

Attachment IV

ORGANIZATION STRUCTURE OF NDFC



Annex N
Attachment V

BOARD OF DIRECTORS

Mr. Aftab Ahmed Khan	Chairman National Development Finance Corporation
Mr. Sadiq Sayeed Khan	Additional Secretary Ministry of Finance, Govt. of Pakistan
Mr. Mahbub Ahmed	Additional Secretary Ministry of Production, Govt. of Pakistan
Mr. D.M. Qureshi	Managing Director Bankers' Equity Limited
Mr. S.A.Q. Haqqani	Managing Director Investment Corporation of Pakistan
Mr. Sibghatullah	Executive Director State Bank of Pakistan

All the directors are appointed by the Government of Pakistan.

Annex N

Attachment VI

MANAGEMENT

Chairman & Chief Executive

AFTAB AHMED KHAN

Managing Director

ABDUL KARIM LODHI

Executive Vice Presidents

YOUSUF ALI	MUHAMMAD ASLAM	NASEER AKHTAR	S.G. ABBAS
NASIR AHMED	RASHID AHMED	MOHAMMAD YOUSUF	HASAN MUJEEB
FAROOQ HASSAN	NASSAR AHMED		

Annex N
Attachment VII

NDFC ACTIVITY FLOW CHART FOR PROJECT FINANCE (TERM LOANS)

	KEY ACTIVITIES	KEY RESULTS
1.	Loan Application	Preliminary appraisal assessment of conformity of loan application to NDFC's policy and strategy and other feasibility criteria
2.	Test Results of Preliminary Appraisal	Approve/Reject
3.	Detail Project Appraisal	a) Assessment of borrowers creditability and capability. b) Key variables to be evaluated. c) Assessment of technical, financial, economic and market viability of the project. If needed assistance of outside consultant of PCS is used for technical and market evaluation.
4.	Test Results of Detailed Project Appraisal	Approve/Reject
5.	Legal Documentation	Preparation and execution of the legal documents
6.	Post Sanctioned Actions	a) Transfer for execution b) Arrangement of consortia funds if required, equity financing and under writing of public issues.
7.	Procurement of Machinery Equipment and Services Including Civil Contractors	Bidding, bid evaluation and selection of suppliers and contractors including vetting of contracts.
8.	Test Results of Procurement	Approve/Reject
9.	Pre-Disbursement Survey	Comments of other deptt. for release of funds
10.	Test Result of Pre-disbursement Survey	Approval for disbursement

Annex N
Attachment VII

KEY ACTIVITIES	KEY RESULTS
11. Disbursement of Funds	Disbursement of funds to escrow account of client.
12. Monitor/Supervise Project Implementation	a) Disbursement of funds for implementation of the project. b) Monitoring and supervision during project implementation. c) Detailed assessment of current and potential problems. d) Detailed diagnosis of causes and corrective action.
13. Monitor/Supervise Test and Trial Runs	Detailed assessment of problems and their rectification
14. Test Results of Completion of Project	Approve/Reject
15. Monitor/Supervise Project in Operation	a) Monitor/supervise the project during operation b) Detailed assessment of current and potential problems. c) Detailed diagnosis of causes and corrective actions.
16. Test Results of Monitoring/ Supervision of Projects in Operation	Approve/Reject

Annex N
Attachment VIII

TOTAL COMPOSITION OF RESOURCES
As on December 31, 1986

	(Rs. in million)
Paid up Capital	132
Reserves	864
Lines of Credit from State Bank of Pakistan (including Demand Loan)	402
Refinancing Facility from State Bank of Pakistan under Supplier's/Export Credit Scheme	2722
NDFC Bonds	200
Deposits	6738
Others	30
IDA Credit Lines/Loan	739
ADB Credit Lines/Loan	2106
French Credit Allocation	293
IDB Lease Equity Line	173
	10,652

FINANCIAL ASSISTANCE APPROVED BY SECTOR AND INDUSTRY
DURING 198[illegible]

(Rupees in million)

	PRIVATE SECTOR						PUBLIC SECTOR						
	Foreign Currency Loan	Bridge Loan	Term loan	Suppliers Credit	Equity Support	Working Capital Loan	Foreign Currency Loan	Bridge Loan	Term Loan	Suppliers Credit	Equity Support	Export Refinance	Working Capital Loan
CONSTRUCTION	6,000	22,500	56,160	-	6,575	30,500	-	-	-	-	-	-	-
ENERGY													
Electricity	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas	-	-	5,000	8,000	-	-	-	-	75,000	325,000	-	-	220,000
Oil	-	-	-	-	-	3,000	-	-	-	-	-	-	100,000
MANUFACTURING													
Agrobased													
Sugar	103,950	-	30,000	221,000	-	245,000	-	-	-	-	-	-	35,000
Dairy and Poultry	10,110	52,975	13,763	5,500	-	22,500	-	-	-	-	-	-	-
Oil & Vegetable Ghee	-	-	-	30,900	-	42,500	-	-	-	-	-	-	518,000
Others	25,000	11,585	20,274	17,740	11,059	54,500	-	-	-	-	-	-	-
Automobile	-	27,000	6,308	-	-	255,000	-	-	-	17,400	-	-	280,000
Cement	318,554	25,000	53,340	124,980	25,000	70,000	-	-	12,000	-	-	-	-
Chemical and Fertilizers	84,160	33,706	3,170	17,700	8,700	84,360	21,623	-	14,658	12,200	-	-	257,500
Steel and Engineering	45,957	25,246	46,779	96,654	-	179,000	7,153	-	2,238	83,655	5,130	7,967	458,000
Textiles	209,455	41,181	10,863	56,903	7,065	850,000	-	-	-	-	-	-	-
Paper & Board	66,225	31,260	22,652	19,994	-	30,000	-	-	-	-	-	-	-
Others	11,354	11,573	39,280	8,795	2,000	119,250	-	-	-	-	-	-	-
HEALTH CARE	6,695	15,200	41,436	4,864	-	30,000	17,258	-	8,902	-	-	-	-
MINING	13,360	1,100	-	-	1,100	-	17,000	-	-	-	-	-	-
TRANSPORT	-	-	-	-	-	37,000	-	-	-	-	-	-	-
OTHERS	11,410	50,000	139,940	6,573	100,860	351,730	-	-	-	-	-	-	-
Total	912,230	342,326	488,965	619,603	162,359	2,404,340	63,034	-	112,748	438,235	5,130	7,967	1,869,000

Note: Modaraba Certificates and equity investments that constitute term financial assistance have been shown as equity support, while equity [illegible] approved is reflected as Bridge Loan.

Attachment X

TERM FINANCIAL ASSISTANCE APPROVED DURING 1986

-Underwriting and Equity Investment
-Projectwise Details

(Rs. in Million)

S.No.	Name of Project	Underwriting Modarba Certificates	Public Issues to be Underwritten	Equity Investment
	PRIVATE SECTOR			
1.	Kamal Enterprises Ltd.		1,100	1,100
2.	Envicrete Ltd.		11,875	6,575
3.	K. Agricole (Pvt) Ltd.		-	0,500
4.	Qurel Cassettes Ltd.		11,573	-
5.	Frontier Ceramics Ltd.		8,706	8,706
6.	Allied Tractors Ltd.		27,000	-
7.	Fecto Cement Ltd.,		195,000	-
8.	Pure Foods Ltd.		8,175	-
9.	Crescent Steel & Allied Products Ltd.		9,750	-
10.	Aurangzaib Cement Industries Ltd.		26,586	-
11.	Haramain (Pvt) Ltd.		22,500	-
12.	Gelcaps (Pak) Ltd.		25,000	-
13.	Sikandar Enterprise Ltd.		6,536	-
14.	National Fructose Company Ltd.		-	10,000
15.	Asian Leasing Corporation Ltd.		-	5,000
16.	Pioneer Cement Ltd.		-	25,000
17.	New Pak Ltd.		-	2,000
18.	NAFCO (Pvt) Ltd.		-	2,860
19.	National Development Leasing Corporation	5,000	-	-
20.	Cast-N-Link Products Ltd.		9,450	-
21.	Uqab Breeding Farms		12,000	-
22.	Proposed Venture Capital Company		-	87,500
23.	Pak Ghee		2,600	-
24.	Manno Salva Pak (Pvt) Ltd.		-	1,059
25.	Sunflower Textile Mills Ltd.		-	7,065
26.	Dairyland Ltd. *		-	3,000
		5,000	377,851	160,365
	PUBLIC SECTOR			
1.	Baluchistan Wheels Ltd.			5,130

* Equity buy back agreement

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PRIVATE SECTOR

(Rupees in millions)

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
.	A.G. Services & Supplies	Nooriabad, Sind	Agriculture equipment	5,000 hand sprayers/annum	8,557	-	-	-	-	-	New Project
.	ASIACON (Pvt) Ltd.	Karachi Sind	Construction	-	-	5,200	-	-	-	-	
.	Aab-e-Hayat Ltd	Quetta Baluchistan	Drilling of tube-wells	240 tubewells over 5 years	-	1,700	-	-	-	-	New Project
.	Al-Ghazi Tractors Ltd.	D.G. Khan Punjab	Assembly/manufacture of tractors	15,000 Fiat	-	6,308	-	-	-	-	New Project
.	All Metals Plating Pak. (Pvt) Ltd.	Gujranwala Punjab	Electroplating	i) Zinc vat line 831,600 sq.ft ii) Zinc barrel line 840,000 kg. iii) Nickel/chrome line 831,600 sq.ft. iv) Hard Chrome line 138,600 sq.ft	-	5,000	-	-	-	-	New Project
.	Allied Tractors Ltd	Hub Baluchistan	Assembly/manufacture of tractors	12,500 Food tractors/	-	-	27,000	-	-		
.	Annoor Textile Mills Ltd.	Dhabaji Sind	Yarn	7,300 lbs/day	-	-	-	1,935	-	-	B&R
.	Anwarzab Cement Industries	Kotri Sind	White cement	50,000 tons/annum	8,030	27,194	-	-	-	-	New Project
.	Asian Leasing Corporation Ltd.	Lahore Punjab	Financial services	-	-	-	-	-	5,030	-	New Project
0.	Ayesha Spinning Mills Ltd.	Lahore Punjab	Cotton synthetic yarn	-	-	-	-	7,000	-	-	B&R
1.	Chitai Rubber Industries Ltd.	Nooriabad Sind	Textile Assessories, rubber apron, spinning costs	8.10 million 4.05 million	9,450	4,670	-	1,633	-	-	New Project
2.	Brinks (Pakistan) Ltd.	Karachi Sind	Installation of electronic burglary alarm surveillance systems to monitor intrusion into banks and houses in some areas of Karachi.	Installation & operation of 500 alarms	1,360	1,328	-	-	-	-	New Project

TERM LOAN APPROVALS DURING 1989 - PROJECTWISE DETAILS

Continued
(Rupees in Millions)

PRIVATE SECTOR

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
.	Cast-N-Link Products Ltd.	Nooriabad Sind	Manufacture of roller chain and die cast items	0.82 m roller chain 0.52 m brake shoes 0.24 m indicators 0.12 m lever assemblies 0.06 m levers 0.20 m crank car covers annually	20.625	-	9.450	5.000	-	-	New Project
.	Castle Engineering Ltd.	S. Pura Punjab	Manufacture of cold drawn and bright steel bars	10,000 tons/annum	-	9.700	-	2.300	-	-	New Project
5.	Chaman Roller Flour Mills	Pashin Baluchistan	Flour	12,000 tons/annum	-	-	-	1.540	-	-	New Project
.	City School (Pvt) Ltd.	Karachi Sind	Providing academic education	3,290 students	-	24.150	-	-	-	-	Expansio
7.	Cofcot Textile (Pvt) Ltd.	Kotri, Sind	Yarn	54 lbs/day	-	-	-	1.989	-	-	BMR
8.	Colony Sarhad Textile Mills Ltd.	Nowshera NWFP	Textile	-	0.141	-	-	-	-	-	BMR
9.	Commercial Union Pakistan Ltd.	Karachi Sind	Office building	-	-	15.000	-	-	-	-	New Project
0.	Construction Company	Karachi, Sind	Build houses for sale	-	-	20.000	-	-	-	-	New Project
1.	Crescent Steel & Allied Products Ltd.	Nooriabad Sind	Manufacture of spiral welded steel pipes	24,000 tons/annum	-	3.929	15.796	9.729	-	-	Escalat
2.	Crescent Sugar Mills & Distillery Ltd.	Faisalabad Punjab	Sugar	41,809 tons/annum	-	-	-	4.000	-	-	BMR
3.	Chaudhry Textile Mills Ltd.	Lahore Punjab	Textile	-	-	4.000	-	-	-	-	BMR
4.	Dossul Pression Castings Ltd.	Hub, Baluchistan	Pression castings	70 tons/annum	-	19.800	-	-	-	-	New Project
5.	Dewan Sugar Mills Ltd.	Thatta, Sind	Sugar	3,500-4,000 tons per day	103.930	-	-	142.000	-	-	New Project
6.	Dairyland Ltd.	Peshawar, NWFP	UHT milk and yoghurt	27.9 m litres UHT mild and 5.20 m. litres yoghurt	-	4.900	7.600	-	-	-	New Project

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PRIVATE SECTOR

Continued
(Rupees in million)

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
.	East West Enterprises Ltd.	Lahore Punjab	Hotel	-	-	2,600	-	-	-	-	New Project
8.	Enem Industries Ltd.	Faisalabad Punjab	Cloth processing and finishing	45,000 metres/day	49,730	-	17,665	-	-	-	New Project
9.	Envicrete Ltd.	Karachi Sind	Fair faced, slag concrete blocks	13.2 m blocks	6,000	5,960	-	-	6,575	-	New Project
0.	Fecto Cement Ltd.	Sanjani F. Area	Portland cement	2,000 tpd	-	-	25,000	-	-	-	New Project
1.	Frontier Ceramics Ltd.	Peshawar NWFP	Sanitaryware-cum ceramic glazed tiles	3,000 tons sanitaryware and 6,000 tons glazed tiles	-	-	8,706	-	8,706	-	New Project
2.	Gelcaps (Pakistan) Ltd.	Hub, Baluchistan	Empty hard gelative capsules	1.2 billion capsules	84,160	-	25,000	-	-	-	New Project
3.	HMA Stanless Steel Pump Manuf. Ltd.	Hub Baluchistan	Steel pumps	15,800 pumps/annum	-	5,600	-	-	-	-	New Project
4.	Haq Dairies Ltd.	Gujranwala Punjab	UHT Milk and dairy butter	50,000 litres UHT milk(extendable to 80,000 litres) and 1000 kgs dairy butter/day	5,049	-	8,500	-	-	-	New Project
5.	Haramain (Pvt) Ltd.	Khushab Punjab	System-built houses	5,000 houses of 600 sq.ft each/annum	-	-	22,500	-	-	-	New Project
6.	Hussain Chemicals Ltd.	Nooriabad Sind	Alkyd resins	2,000 tons/annum	-	3,170	-	13,500	-	-	New Project
7.	Inenza Ltd.	Nooriabad Sind	Disposable diapers	21.6 m/annum	6,050	-	-	-	-	-	New Project
8.	Island Textile Mills Ltd.	Kotri Sind	Cotton blended yarn	3,360,000 lbs	-	-	-	0.771	-	-	EWR
9.	J. Foods Ltd.	Moro Sind	UHT Milk and dairy butter	[illegible] UHT milk and 838 tons dairy butter/annum		-	21,675	-	-	-	New Project

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PRIVATE SECTOR

Continued
(Rupees in million)

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
40.	K. Agricole Ltd.	Islamabad F. Area	Model nursery and agro super market	122,400 plants from parent stock cutting 1,440,000 plants from seeds 128,000 sq.ft. grass	-	2,250	-	-	0.500	-	New Project
41.	Kamal Enterprises Ltd.	Sibi Baluchistan	Agricultural gypsum, Gypsum rock, Plaster of paris	15,000 tons 30,000 tons 15,000 tons annually	-	-	1,100	-	1.100	-	New Project
42.	Kohinoor Industries Ltd.	Faisalabad Punjab	Yarn	-	-	-	-	12,126	-	-	BMR
43.	Konsh Industries Ltd.	Hazara NWFP	Polypropylene bags	3,672 m. bags of 50 kg each/annum	1,904	-	-	-	-	-	New Project
44.	Landhi Engineering Works Ltd.	Karachi Sind	Spring assemblies and spring levers	260,000 units/annum	-	0.200	-	-	0.925	-	BMR
45.	Lakson Tabacco Co. Ltd.	Karachi Sind	Cigarettes	4,086 cigarettes/ annum	-	34,610	-	5,390	-	-	BME
46.	Life Line Ltd.	Attock Punjab	LPG filling and distribution	14,000 tons/annum	-	5,000	-	8,000	-	-	New Project
47.	M. Abdul Rehman & Co.	Sibi, Baluchistan	Coal	15,000 tons/annum	2,000	-	-	-	-	-	BMR
48.	Mr. Ahmed & Co. Ltd.	Sibi Baluchistan	Coal	30,000 tons/annum	2,560	-	-	-	-	-	BMR
49.	Manno-salva Pakistan (Pvt) Ltd.	Karachi Sind	Mushrooms	130 tons/annum	-	3,654	-	2,700	1,059	-	New Project
50.	Maymar Housing Services Ltd.	Karachi Sind	Township project on 20 acres	-	-	10,000	-	-	-	-	New Project
51.	Mehar Papers Mills Ltd.	Lahore Punjab	Writing/Printing paper	21,000 tons/annum	55,935	6,456	31,260	15,759	-	-	New Project
52.	Menboob Corporation (Pvt) Ltd.	Rawalpindi Punjab	Bulk oil storage	555,000 gallons/ annum	-	1,000	-	3,000	-	-	New Project
53.	Mehran Agro Industries (Pvt) Ltd.	Multan Punjab	Extraction of cotton seed oil	3,420 tons cotton seed oil	-	-	-	9,700	-	-	New Project
54.	Modern Diagnostic & Health Centre	Karachi Sind	Hospital	150 beds	5,095	31,405	15,200	-	-	-	New Project

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PRIVATE SECTOR

Continued
(Rupees in million)

r. o.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
.	Monalisa Fruit Juice Industries Ltd	Karachi Sind	Fruit Juice	-	-	6,520	3,410	-	-	-	New Project
.	National Development Leasing Corporation	Karachi Sind	Financial services	-	-	-	50,000	-	5,000	-	New Project
7.	Nafko (Pvt) Ltd.	Karachi Sind	Bottling of purified water	20.4 m. litres	4,000	1,850	-	-	2,860	-	New Project
8.	National Fructose Co.	Hub Baluchistan	High fructose syrup	25,000 tons/annum	-	-	-	-	10.000	-	New Project
9.	National Printing & Packaging Ltd.	Karachi Sind	Paper	500 tons/annum	7,616	-	-	0.310	-	-	BME
0.	Naveen Industries (Pvt) Ltd.	Karachi Sind	Cotton and blended fabric	5,456 m. metres/ annum	-	-	-	8,000	-	-	BME
1.	New Pak Ltd.	Hub Baluchistan	Drinking/ice cream cups and their lids	60 m. cups and 30 m. lids/annum	-	-	-	-	2,000	-	New Project
2.	New York Polyclinic Ltd.	Karachi Sind	Hospital/clinic	120 beds	-	10,051	-	4,864	-	-	New Project
3.	Newage Plastics (Pvt) Ltd.	Lahore Punjab	Precipitated calcium carbonate	3,000 tons/annum	-	-	-	4,200	-	-	New Project
4.	Niazons Ltd.	Hub Baluchistan	Potato chips	500 kg potato chips/hr	-	4,000	-	-	-	-	New Project
5.	Nishat Mills Ltd.	Faisalabad Punjab	Yarn	570,000 lbs/annum	-	-	-	7,923	-	-	BME
6.	Pure Foods Ltd.	Hub Baluchistan	Confectionery	4,200 tons/annum	25,000	4,600	8,175	7,300	-	-	BME
7.	Pakistan Services Ltd.	Karachi Sind	Hotels	700 rooms	-	100,000	-	-	-	-	BMR
8.	Pioneer Cement Ltd.	Khushab Punjab	Grey portland cement	2000 tons/day Project	175,000	-	-	100,000	25,000	-	New Project
9.	Qurel Cassettes	A.Kashmir	Audio Cassettes	12 million C-60 audio cassettes/annum	-	-	11,573	-	-	-	New Project
0.	Raja Flour Mills Ltd.	Jhelum Punjab	Flour	30,000 tons/annum	-	1,700	-	3,000	-	-	New Project
1.	Rawalpindi Club	Islamabad F. Area	Hotel	-	-	2,000	-	-	-	-	Expansion
2.	Rai Niaz Flour Mills Ltd.	Sahiwal Punjab	Flour	30,000 tons/annum	-	-	-	3,200	-	-	New Project
3.	Shahmurad Sugar Mills	Thatta Sind	Sugar	-	-	30,000	-	-	-	-	BMR

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PRIVATE SECTOR

Continued
(Rupees in million)

No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
4.	Sanghar Sugar Mills Ltd.	Sanghar Sind	Sugar/molasses	2,000-3,000 tcd	-	-	-	75,000	-	-	New Project
	Salman Noman Textile Mills Ltd.	Kasur Punjab	Textile/cotton yarn	3,343 m. kg/annum	37,444	4,713	16,980	6,300	-	-	New Project
	Sana International (Pvt) Ltd.	Karachi Sind	Ice and cold storage	20 tons ice/day storage for 25000 crates	-	-	-	1,750	-	-	New Project
	Sardar Oil Mills Ltd.	D.G.Khan Punjab	Ghee	7,500 tons/annum	-	-	-	6,800	-	-	BMR
5.	Sayyed Machinery Ltd.	Lahore Punjab	Farm implements and components for agriculture machinery	400 reapers 250 seed drills 150 disc ploughs 500 tyne cultivators and tractors/annum	-	2,550	-	-	-	-	New Project
79.	Sikander Enterprises Ltd.	Nooriabad Sind	Cotton yarn	2,41 m. kg/annum	14,640	2,150	6,536	2,000	-	-	New Project
80.	Siraj Steels Ltd.	Lahore Punjab	Wire, rods, angles, tub and other steel products	180,000 tons/annum	-	-	-	80,000	-	-	New Project
81.	Snow White Cement Ltd.	Dadu Sind	White cement Oil well cement	80,000 tons 20,000 tons/annum	135,524	26,146	-	24,980	-	-	New Project
82.	Sohail Textile Mills Ltd.	S.Pura Punjab	Cotton yarn	0.758 m. kg/annum	-	-	-	3,856	-	-	BMR
83.	Sozo Water Park (Pvt) Ltd.	Lahore Punjab	Amusement Park on water theme	-	-	2,662	-	3,573	-	-	New Project
84.	Special Irons & Steels Ltd.	Lahore Punjab	Cast iron foundry and forgings	3,000 tons/annum	16,995	-	-	0.700	-	-	New Project
85.	Sunflower Textile Mills Ltd	Kasur Punjab	Cotton yarn	3,667 m. kg/annum	85,100	-	-	5,000	7,065	-	New Project
86.	Termizi Oil Industries (Pvt) Ltd.	Bahawalpur Punjab	Cotton seed oil seed oil	3,800 tons cotton 1,100 tons lint 3,400 tons hull 8,800 tons cotton seed	-	-	-	14,400	-	-	New Project
87.	Thatta Textile Mills Ltd.	Nooriabad Sind	Cotton yarn	2.89 m kg/annum	22,400	-	-	-	-	-	New Project
88.	Thal Paper Industries Ltd.	Khushab Punjab	Newsprint	50-56 tons/day	2,674	16,196	-	3,925	-	-	New Project

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

Continued
(Rupees in million)

PRIVATE SECTOR

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
89.	United Mineral Company (Pvt) Ltd.	Sinjidi Baluchistan	Coal	5,900 tons/annum	8,800	-	-	-	-	-	New Project
90.	Uqab Breeding Farms	Thatta, Sind	Breeding dairy animals and associated dairy farming functions	-	-	-	12,000	-	-	-	New Project
91.	Umda Feeds Ltd.	Gujranwala Punjab	Poultry feed	30,000 tons/annum	-	2,500	-	5,500	-	-	New Project
92.	Venture Capital Company	-	Financial Services		-	-	-	-	87,500	-	New
93.	Yasreb Poultry Farm & Feed Mills	Kasur Punjab	Poultry eggs and feed		5,061	9,363	-	-	-	-	New Project

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PUBLIC SECTOR

(Rupees in million)

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
1.	Al-Technique Corporation of Pakistan	Lahore Punjab	Gamma sterilization facilities for medical and agricultural products	200,000 cu.ft of medical and surgical products	17,258	8,902	-	-	-	-	New Project
2.	Baluchistan Wheels Ltd.	Bela Baluchistan	Wheels	376,000 wheels/annum	-	-	-	-	5,130	-	New Project
3.	Hazara Phosphate Fertilizer Ltd.	Hazara NWFP	Phosphetic fertilizer	90,000 tons/annum	13,981	-	-	-	-	-	New Project
4.	Heavy Mechanical Complex Ltd.	Taxila Punjab									Export refinance Contracts Awarded against Intl. tenders
	i) Pirkoh Gas Co		Gas dehydration plant	50mmcfd	-	-	-	-	-	2,273	
	ii) Kohinoor Chemical Co. Bangladesh		Boilers	-	-	-	-	-	-	3,238	
	iii) Ministry of Railways		Travelling cranes and engineering services	-	-	-	-	-	-	2,456	
5.	Metropolitan Steel Corp.	Karachi Sind	Rerolling mills	100,000 tons/annum	0,500	-	-	-	-	-	BMR
6.	Millat Tractors Ltd.	S.Pura Punjab	Tractors	-	-	-	-	17,400	-	-	BMR
7.	National Fibres Ltd.	Karachi Sind	Polyester staple fibre	3,600 tons/annum (additional capacity)	6,400	-	-	-	-	-	BMR
8.	Naya Daur Motors (Pvt) Ltd.	Karachi Sind	Tool dies molds	40,000 components of Suzuki cars and pickups	-	-	-	82,549	-	-	Expansion
9.	OGDC A/c Loti Gas Development Project	Baluchistan	Natural Gas	40 mmcfd	-	75,000	-	25,000	-	-	New Project
10.	OGDC A/c Dakhni Development Project	Attock Punjab	Natural Gas Crude oil LPG Sulphur	25.4 mmcfd 2,450 barrels/day 29.0 tons/day 72.4 tons/day	-	-	-	300,000	-	-	New Project
11.	PECO (Continuous Casting)	Lahore Punjab	Steel billets	60,000 tons/annum	6,633	2,238	-	1,086	-	-	New Project
12.	Pakistan National Shipping Corporation	Karachi Sind	Marine transportation	-	17,000	-	-	-	-	-	New Project

TERM LOAN APPROVALS DURING 1986 - PROJECTWISE DETAILS

PUBLIC SECTOR

Continued
(Rupees in million)

Sr. No.	Name of Project	Location	Principal Products Produced or services provided by project being financed	Proposed Capacity	Foreign Currency Loan	Local Currency Loan	Bridge Loan	Suppliers Credit Loan	Equity	Export Refinance	Remarks
3.	Sarhad Development Authority A/C D.I. Khan Bricks & Tiles	D.I. Khan NWFP	Tiles, standard and facing bricks	30 m, tiles and bricks/annum	-	11,250	-	3,300	-	-	BMR
4.	Sind Sugar Corporation A/c Thatta Distillery Project	Thatta Sind	Industrial alcohol	40,000 litres/day	1,242	3,408	-	8,700	-	-	New Project
5.	Thatta Cement Co. Ltd.	Thatta Sind	Cement	1000 tpd	-	12,000	-	-	-	-	BMR

mmcfd = million cubic feet per day
tcd = tons crushed per day
tpd = tons per day
BMR = Balancing/modernization/rehabilitation
BME = Balancing/modernization/expansion
UHT = Ultra high temperature
m = million
- = Not applicable/not available

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.DI:4696D

OUTLINE FOR TECHNICAL ASSISTANCE WORKSCOPE

I. BACKGROUND

The Private Sector Power Project will provide the institution building and general support required by the GOP in the implementation of its private power policy. This institution building and general support will require long-term and short-term technical assistance for the Private Power Cell (PPC) of the Ministry of Water and Power, the WAPDA Private Power Cell (WPPC) of WAPDA, Coal Mining Cell (CMC) of the Ministry of Petroleum and Natural Resources, Private Energy Division (PED) in NDFC and the Energy Wing (EW) of the Planning Commission. This annex outlines the requirements for the implementation of the Project.

II. CONTRACTOR QUALIFICATIONS

The contractor will be selected using USAID's competitive selection procedures as described in the Procurement Plan of the Project Paper. The selected contractor is expected to be an internationally recognized individual firm or a joint venture which combines financial and technical management consulting experience with special expertise in power project development, power system planning, training, power system, finance and power system engineering. The firm will provide a Chief of Party (COP), upto five long-term resident advisors and a significant number of short-term consultants for the respective services. As such, the firm(s) must have a strong cadre of support personnel to respond to the various project needs as they develop.

III. OUTLINE OF TECHNICAL SERVICES

The Contractor will provide the necessary qualified personnel required to support the PPC, the WPPC, CMC, PED and the EW during the first five years of the Project. At this time, three long-term resident advisors are planned, one for PPC and two for PED. On a specific GOP request a long-term resident advisor shall be provided to WPPC. Similarly depending on the need of the project, a long-term environmental advisor will also be brought on board. On an as required basis, short-term consultants will also be required to support the GOP and USAID during project implementation. Following are the scopes of work for the respective advisors.

A. Private Power Policy/Planning Specialist for PPC:

The duration of this position will be 48 person months. The key responsibility will be to assist the PPC in the review, appraisal and evaluation of proposals and during negotiations of LOIs and IAs. To assist in these activities, he/she will identify specialized individuals and arrange to acquire their services on an "as needed" basis. He/she will also arrange training of the PPC staff in the review of private sector proposals, development of software that will be used for evaluation and financial analysis of private sector proposals, and in the use of export credits and commercial financing. He/she will identify, place and coordinate the training

of individuals in U.S. institutions and industries directly or through AID/W contractors that specialize in placement of personnel from developing countries.

The incumbent will have an advanced degree in power engineering and preferably an MBA degree. He/she will have 10 to 15 years of utility experience specially in the areas of utility planning and operations, financial and economic analysis of power projects, developing power purchase formulas, etc. Other responsibilities will include assisting the PPC in :

- Identifying private power projects which are consistent with the GOP's least cost expansion plan for the national power system;
- Carrying out economic analyses of subproject proposals and making comparisons of the costs of electric power from public sector and private sector sources;
- Reviewing model PPAs developed by WAPDA for purchasing power from the private sector;
- Developing model LOIs and other documents for contracting between WAPDA/GOP and private sector entities for the supply of power;
- Developing proposal solicitation advertisements for private sector power;
- Appraisal and evaluation of proposals;
- Monitoring the compliance of private sector power suppliers to the PPAs; IAs and LOIs during both construction and operation;
- Disseminating information on power investment opportunities to the private sector through seminars and publications.
- Coordinating & arranging for the out-of-country training programs for PPC personnel at U.S. utilities, institutions and power based industries.

The team leader will be responsible for coordination the activities and work of all the team members and the preparation of work plans, schedules of activities.

B. Power Engineer/Specialist for WPPC:

The duration of this position will be 48 person months. The key responsibility of this position is to assist the WPPC in reviewing, negotiating and administering long-term PPAs, construction monitoring and, later, coordinating the operation of privately owned power plants. The incumbent will identify and arrange to acquire the services of specialized individuals with expertise in power system planning, utility financing and contracts management for the fulfillment of these tasks. He/she will impart continued training to the WPPC staff in the preparation of PPAs. He/she will further identify, place and coordinate the training of these individuals in U.S. institutions and industries directly or through AID/W contractors which specialize in placement of personnel from developing countries.

He/she will have an advanced degree in engineering with extensive experience in utility planning/operations, power plant management and in developing power pricing/purchasing formulas. The incumbent will have many years of experience in developing PPAs. Specific responsibilities shall include:

- Assisting WPPC in defining technical criteria and terms for system interconnections which will protect grid integrity;
- Making recommendations to WPPC on power purchase contract terms to be included in PPAs based on agreed upon tariff policies, non-performance penalties and capacity factors;
- Estimating the costs of infrastructure to connect proposed private power stations with the national grid;
- Supporting WPPC in negotiating and approving PPAs with private power suppliers, based on LOIs issued by the PPC;
- Certifying payments to private power operators based on measured delivery of power and adherence to contract terms; and
- Support WPPC in adjusting retail tariffs consistent with the purchase of private power.

C. Utility Finance Specialist for PED:

The duration of this position will be 24 person months. The key responsibilities will be to assist PED in the financial appraisal of subprojects and assessment of adequacy of financial plans. He/she will also assist the PED in developing guidelines and procedures for the financial appraisal and supervision of subprojects. In the fulfillment of these tasks, the advisor will identify and arrange to acquire the services of specialized individuals with expertise in financial analysis, auditing, contracts management and computer systems. Besides, the advisor will impart necessary training to the PED staff in the financial review and appraisal of capital intensive energy projects on a continuous basis and through in-country seminars to be arranged periodically. He/she will further identify, place and coordinate the training of these individuals in U.S. institutions and industries directly or through specialized AID/W contractors. This training will be in the areas of institutional finance services, development banking, loan syndication, credit risk analysis, equity finance, bond issuance and capital market development, etc. He/she will work closely with and provide support and necessary assistance to the team that will study the viability of developing PED into an autonomous financial institution.

The advisor will have an advanced degree in finance/accounting with extensive experience in the banking sector and/or other similar financial institutions handling utility business. He/she will have broad exposure to such banking functions as credit risk analysis, loan syndication, equity financing and capital market development. Additional experience in the finance, audit, contracting, accounting and administration functions relating to utility industry is desirable. Specific responsibilities shall include assisting the PED in:

- Appraising subprojects to determine economic viability and in assessing the financial elements of proposals;
- Review of legal documents such as PPAs and contracts for purchase of plant and machinery;

- Opening Letters of Credit in local and foreign currency and arranging foreign currency loans from supplier countries and the international market;
- Arranging loan syndication, loan restructuring, acquisition and merger proposals;
- Overseeing lease financing arrangements, joint ventures and venture capital financing;
- Preparation of formats to be submitted by sponsors as the basis for release of funds and authorization documents for the release of funds;
- Managing debt servicing; and
- Managing the overall private sector power portfolio and monitoring areas of financial exposure.

D. Power Engineering Advisor for PED:

The duration of this position will be 48 person months. The key responsibilities will be to assist PED in the technical appraisal of subprojects and supervision of subproject implementation. The advisor will also assist the PED in developing guidelines and procedures for the technical review, appraisal and supervision of subprojects in line with the implementation schedules of these subprojects. Short-term services of specialized individuals in the areas of power technology, environmental monitoring and construction monitoring will be acquired on an "as needed" basis for this purpose. Since NDFC has a limited experience in the appraisal/monitoring of large, capital-intensive projects, the advisor will develop a comprehensive training program for the PED staff to create in-house expertise in the evaluation of these projects. The training will be through in-country seminars/workshops to be held periodically and in U.S. institutions and industries. The advisor will be responsible for the identification and coordination of foreign training either directly or through specialized AID/W training contractors.

The advisor will have an advanced degree in engineering with extensive utility related experience, specially in power plant design/engineering, power generation, construction planning and monitoring and environmental issues related to large power plants. Additionally, a few years of experience in financial engineering of large power plants is desirable. Specific responsibilities of the position shall include assisting the PED in:

- Appraisal of subprojects to determine the technical viability, and assess the management, economic and marketing elements of proposals;
- Review of legal documents such as PPAs and contracts for purchase of plant and machinery and for acquisition of technical services;
- Monitoring the construction of power plants being financed to ensure that all subprojects remain on schedule and within budget;
- Finalizing project monitoring formats to be submitted by sponsors as the basis for release of funds;
- Monitoring subproject performance once production has begun;
- Review of legal documents such as PPAs and contracts for purchase of plant and machinery;
- Monitoring the construction/operation of subprojects and preparing quarterly progress reports, annual reports and subproject completion reports.

E. ENVIRONMENTAL ADVISOR

The duration of this position will be upto a maximum of 48 months. The Advisor shall provide broad-ranging scientific, technical, and related inputs required to design and implement private sector power projects and shall provide environmental expertise in support of these projects. In addition, he will serve as an Advisor for all activities involving environmental monitoring and environmental assessment studies.

In collaboration with other professional staff, the Advisor will draft a wide variety of technical, administrative, and policy oriented basic project documents and shall hold primary responsibility for providing draft responses and for editing and overseeing the production and distribution of written project outputs which fully and accurately reflect the technical and policy positions of the Mission.

In addition, the Advisor shall assist in the review of interim and final documents prepared by the consultants and others, to raise appropriate technical and policy issues and to insure that all programatic elements of contractor studies conform to the needs, concerns, and policies of USAID, the Governments of Pakistan and the United States, and other donors. The Advisor will, among other things:

- Advise on technical matters related to capital project and environmental program and project planning, design, analysis, implementation, and evaluation.

- Perform critical review of interim reports, and review final reports to ascertain compliance with agreements reached in the course of earlier reviews.

- Render a professional judgement, orally or in writing, as to the soundness of plans for environmental monitoring equipment installation and operation, and environmental assessment. Monitor the effectiveness with which these programs are carried out, and advise on the operating and maintenance practices, policies, and procedures proposed by contractors and adopted by the GOP in connection with environmental activities.

- Provide technical input to environmental assessment contract negotiations, and advise on the adequacy of environmental assessment workplans submitted by contractors.

- Identify and advise on significant and specific needs for research, analyze and evaluate the results, and documents all findings.

- Supervise the activities and monitor the performance of environmental monitoring and environmental assessment contractors at remote field locations.

- Provide reports, orally or in writing, on the progress of environmental studies, including recommendations, as appropriate, for modification of plans or for corrective action by the contractors to conform to understandings and agreements.

- Insure the production of comprehensive environmental assessment workplans, and independently coordinate the efforts of environmental monitoring and environmental assessment contractors.

- Provide professional guidance/training of GOP environmental and other staff but not be limited to, an understanding of 22 CFR 216 as applied to USAID funded project activities.

F. CHIEF OF PARTY

The duration of this position will be 48 person months. The key responsibilities will be to assist the Resident Advisory Team related to contract management activities. Other responsibilities shall include coordinating the need and making arrangements for short-term technical assistance to be provided to the concerned GOP entities. The Chief of Party (COP) will also be responsible for identifying and arranging the services of qualified local staff for the PPC. Based on inputs from the Resident Advisors, the COP will develop and coordinate with the GOP a comprehensive training program for the staff of PPC, PED, WPPC, CMC and EW. The incumbent will be the sole USAID contact point for all contractual and technical issues relating to the functioning of the Resident Advisory Team. The COP will monitor the performances of the resident advisors and manage the budgetary matters.

The COP will have an advanced degree in management or related fields with sufficient exposure to utility/engineering businesses. The incumbent will have had a number of years of experience of project management and contract management in a supervisory role, preferably in a third-world country. Additional experience in the field of utility related finance, audit and administrative functions is desirable. Specific responsibilities of this position are:

- Functions to articulate the project and program management to USAID for the purpose of compliance with reporting requirements and to obtain necessary authorizations for project operation.

- Formulates, reviews and monitors project policies and procedures essential to project management and private utility operations.

- Works with the USAID Project Coordination and the Resident Advisors to analyze problems that require special coordination internally and externally in achieving the objectives.

- Based on program needs, determines the project needs for scheduling of activities, manning levels and financial analysis.

- Monitors information that facilitates site/home office coordination, specially relating to short-term advisory services and overseas training of GOP staff.

- Interprets USAID regulations to formulate project policies that determine operational criteria for personnel administration, financial accounting and support services.

- Monitors performance evaluation of all long-term and short-term expatriate and FSN personnel.

- Reports to the consultant's home office(s) on all aspects of program operation for the purpose of obtaining operational policy determinations.

IV. LEVEL OF EFFORT ESTIMATES

The level of effort estimated for the respective expatriate technical assistance described above is shown in Tables IV-I. These estimates are based on current Mission experience in providing institutional building assistance with the respective Ministries involved. The Mission has two major projects in these areas, namely Rural Electrification and Energy Planning and Development. In the event that award of the contract is not possible in time to support subproject review and appraisal efforts for subprojects currently under consideration by the GOP, some of the short-term effort listed may be used under IQCs or other USAID direct contracting procedures.

V. SCOPE OF WORK FOR THE MISSION STAFF PROJECT COORDINATOR

A. BACKGROUND

The Water and Power Development Authority (WAPDA) AND Karachi Electric Supply Corporation (KESC) own and operate the Pakistan power system. WAPDA is an agency of the Government of Pakistan (GOP) and supplies electricity to all of Pakistan, except the Karachi area which is served by KESC. KESC is a limited stock company with the majority ownership held by the GOP.

The WAPDA/KESC power system, depending heavily on the GOP for investment capital, has become increasingly unable to meet the growing demand for power. The most dramatic evidence of this is widespread load shedding, which reached a peak of over 1,600 MW (estimated to be about 40-percent of the connected load) in January 1986. In 1985, the Prime Minister directed WAPDA to develop plans for eliminating load shedding and accelerating the electrification of villages to achieve electrification of 90-percent of the country's more than 45,000 villages by 1990. The plans developed by WAPDA call for generating capacity to be increased from 6,164 MW in 1986 to 10,174 MW in 1990 (an average increase of 1,000 MW per year). The expansion of generation capacity is to be accompanied by energy loss reduction and peak load management programs designed to constrain annual peak demand growth in the same period to 10 percent. WAPDA plans offer

full accomplishment of the Prime Minister's Mandate. However, the plans require an average annual development expenditure from 1986 through 1990 of 24 billion Rupees (U.S. $ 1.4 billion) increasing to a level of 47 billion Rupees (U.S. $ 2.8 billion) in the years from 1991 through 1993 to maintain necessary system growth. WAPDA and the GOP have a limited potential for local resource mobilization. There is growing political pressure and development imperatives to increase funding for education, health and other social programs. It seems clear that WAPDA's plans are not implementable in the foreseeable future due to funding constraints.

Following extensive USAID Policy dialogue, in August 1985 the GOP approved a policy statement regarding the involvement of the private sector in power generation. Later that year, a call for proposals for private sector investments in power generation was developed with USAID assistance. Many proposals and expressions of interest for several thousand MW in new power generation capacity have been received.

The World Bank and other donor representatives have been informed of these actions and have provided valuable inputs and suggestions. Ultimately, all donor agencies joined USAID in support of the private sector approach. All the donors have agreed that the GOP's private sector power initiative merits multi-donor support and that a more specific and detailed framework is needed. During a recent GOP/donor energy sector meeting the World Bank agreed to assume the lead donor agency role in coordinating all donor agencies inputs.

USAID and other donors are expected to provide funding to the Energy Development Fund (Fund) starting during the latter half of the calendar year 1988. USAID will finance the Technical Assistance requirements for the specific institutions involved in the private sector energy development process. This procurement of services provides for a long-term advisor to assist the institutional side of project implementation & Monitoring.

B. SCOPE OF SERVICES

The Advisor shall provide the specific services required to assist the GOP institutions in their implementation of the USAID Private Sector Power Project. This effort will include extensive coordination with the other donors, including World Bank, ADB, ODA and others. The Advisor will generally advise USAID regarding the activities and performance of one or more Technical Assistance consultancy firms required under the project.

1. Technical Services

The services to be provided shall include, but not be limited to:

A. Provide general advice to USAID regarding private sector project institutional and financial issues that arise during implementation.

B. Monitor institutional development (including but not limited to staffing, policy establishment, planning, training, financial packaging (long and short term), activities within the National Development Finance Corporation (NDFC), PED, the Ministry of Water and Power, the Energy Wing of the Planning Commission, the Water and Power Development Authority, and the Ministry of Petroleum & Natural Resources Coal Mining Cell.

C. Develop workscopes, specifications and budgetary estimates for studies, technical assistance, commodities and other contracts/agreements required to implement the PSP Project.

D. Monitor financial aspects for non-Fund capitalization elements of the USAID PSP Project.

E. Prepare status reports (commercial, technical, financial, progress, etc.) required for PSP Project implementation.

F. Prepare (and/or monitor preparation) of donor Status Reports as required by each donor agency (such as World Bank, Asian Development Bank, etc.) to the PSW.

G. Meet with potential donors to the Fund to assist in their decision-making process as related to financial participation in the Fund.

H. Prepare plans for evaluation of the PSP Project after two years of project implementation. This will include: identification of potential evaluation team participants, preparation of work scopes for team members, preparation of inputs for project evaluation as required, coordination of review meetings, and review of the evaluation documentation developed by the evaluation team.

I. Levelopment and monitoring progress on the PSP Project Implementation Schedule.

J. Advise USAID on the financial, economic and technical viability of PS Fund sub-projects.

K. Monitor efforts required to evaluate alternative project financial requirements for future USAID funding (i.e. loan guarantees, etc.).

L. Prepare (in cooperation with USAID Mission staff) inputs or complete documentation for professional society quality papers which reflect the PSP Project objectives and accomplishments.

M. Prepare inputs for USAID procurement waivers that are required for project implementation (including capitalization and non-capitalization elements of the project).

N. Preparation of Project documents (PIO/T, PIO/C, PIO/P) for the USAID PSP Project implementation.

2. Technical Writing

The Advisor shall draft and edit technical components of project documents and correspondence including, among others, project development documents, core documents, and reports.

3. Meetings

Prepare for and represent, if necessary, the Office of Energy and Environment in meeting with officials of AID/W, World Bank, Asian Development Bank, GOP, and contractor personnel.

4. Field Inspection

Conduct periodic inspection visits to project sites for independent assessment of progress, accomplishments, problems, etc. Report on important or significant findings and, where appropriate recommend corrective action to be taken.

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ANNEX P

POWER PURCHASE AGREEMENT OUTLINE

1.0 Introduction

The Power Purchase Agreement (PPA) sets forth the terms and conditions whereby the private sector proposer sells electricity to WAPDA. This issues paper addresses the principles and key issues of both standard and non-standard PPA. It makes recommendations and describes other potential provisions that should be included in a PPA.

Issues

Following are the key issues to be addressed in this assessment:

- o The type of PPAs most appropriate
  - Standard or non-standard agreements.
  - Large projects or small
- o Structure of the pricing provisions
  - Single energy price or capacity and energy price
  - What pricing incentives
- o How will performance be measured and penalties applied for failure to perform
  - Applicability of previously developed methods
  - Are other approaches preferred
- o What flexibility should WAPDA have to schedule and dispatch generation
- o How will disputes be resolved
- o Should model PPAs be drafted

Findings and Recommendations

The findings, conclusions and recommendations concerning the above issues as discussed more fully in this paper are:

- o A simple, standard PPA should be developed for projects of 50 megawatts or smaller. It could be used both for unsolicited proposals and for bid requests.
- o A more comprehensive, non-standard, negotiated PPA will be needed for larger projects.
- o The preferred pricing structure is a two-part energy and capacity price with higher price as incentives to encourage energy delivery during peak hours and critical months. The single energy price previously developed is workable, but more difficult to apply.
- o The comprehensive performance measurement previously developed is difficult to apply in operation and is not recommended. A simpler, easily applied approach related to critical month performance would produce desired results and is recommended for use to determine penalties for failure to perform under non-standard agreements.

- o Small projects with the standard PPA should deliver all the energy they can produce and WAPDA be required to take delivery. Payment is recommended for firm capacity from small projects only upon meeting certain criteria.
- o WAPDA should have complete scheduling and dispatch flexibility for large projects.
- o Ultimate resolution of disputes should be through international arbitration procedures.
- o In order to test the willingness of the private sector to develop small projects, a standard PPA should be prepared, made available and proposals for specified and unspecified projects invited.
- o Further drafting of non-standard agreements is unnecessary at this time. With the principles recommended in this paper and other sources of information or assistance a non-standard PPA can best be developed through actual negotiation.

The recommended non-standard PPA is designed for larger, high capacity factor projects where price and other terms must be negotiated. The recommended standard PPA is designed for small projects, has fixed terms, except possibly price, and is used to invite bids on prescribed projects or to encourage unsolicited proposals.

The key principles of each type are summarized below.

Non-standard PPA	Standard PPA
50 megawatts or larger	Smaller than 50 megawatts
Dispatchable by WAPDA	WAPDA must take delivery
Take or pay firm capacity related to project cost	Pay for energy at delivered price - either fixed or bid
Incentive 2-part pricing structure	Incentive 2-part pricing structure
Penalty for failure to perform in critical months	Pay for capacity only if furnished according to criteria
Terms negotiable	Terms fixed (standard)

Development of this paper draws from previous work on PPA's as follows:

1.1 A draft PPA was prepared in February 1987 for USAID for the proposed Hub Chowki private sector electric power project. Some of the key provisions in that draft were developed in response to certain specified requirements. This paper addresses some of those provisions, possible alternatives and provides recommendations.

1.2 Coopers and Lybrand, in the role of advisors to the World Bank, recently have produced for discussion purposes a draft PPA which adopts some of principles in the Hub Chowki PPA draft or modifications to that draft. The World Bank's advisors have offered many good suggestions and have raised a number of important issues relating to the PPA.

2.0 Elements of Power Purchase Agreements

2.1 The core of a PPA consists of the pricing provisions, and performance requirements. It also sets forth various obligations of the parties, necessary operating provisions, how disputes are resolved and other matters as the parties require. It may incorporate and make part of the PPA certain supplemental schedules, appendices or other separate agreements that are operative in parallel with the PPA, and only so long as the PPA is operative (such as an implementation agreement or fuel supply agreement).

2.2 Because of the unique operational requirement, large size or complex nature of some projects a separate negotiation and development of specific provisions would be required. Such a project PPA would be expected to contain take or pay provisions, dispatchability by the Purchaser and more stringent plant performance requirements.

2.3 PPA negotiations can be simplified and the time required significantly reduced with standard agreements. Standard PPA's are particularly appropriate where a number of relatively small projects are anticipated, and where the core elements can be simple and standard. In such a PPA the Purchaser would be required to take all energy delivered without dispatchability and would pay only when delivered. If the Seller can meet simple to administer performance requirements for firm power, an additional capacity payment would be made.

3.0 ISSUES, PRINCIPLES AND PPA CONTENT

This paper will address the requirements of the more complex PPA designed for larger projects and which would require negotiation of many of the details. It also addresses, in parallel, provisions appropriate to a Standard PPA for use with small projects. Small projects for the purpose of this discussion is 50 megawatts or less. However GOP may find smaller projects with unique technology that would require special PPA provisions. Conversely, there may well be projects larger than 50 megawatts that could be developed under the standard agreement.

Table 1 is a table of contents of a proposed PPA to be negotiated for a large project. For reference the items will be discussed in the order they appear in this table. The approach adopted for this paper is 1) introduce or describe the provision or principle, 2) indicate whether it would be needed in the standard PPA as well as the non-standard PPA 3) if necessary describe the provision or principle for both non-standard and standard PPA 4) if alternate approaches are discussed, recommendations are provided. An actual PPA draft is not prepared as part of this paper. The Hub Chowki draft and other PPA's are available for reference to possible contract provisions.

In this paper the terms Seller and Purchaser are used in the general sense. Seller is assumed to be any private sector proposer or developer. Purchaser refers to the purchasing utility, presumed to be WAPDA.

TABLE 1

POWER PURCHASE AGREEMENT
SAMPLE TABLE OF CONTENTS

1. Introductory statements
2. Definitions
3. Term of Agreement
4. Seller's Facility
5. Testing
6. Completion and Initial Operation
7. Energy Delivery and Scheduling
8. Price for Energy
9. Price Adjustment Related to Costs
10. Price Reduction Related to Performance
11. Payment and Billing
12. Interconnection and Communication Facilities
13. Operation and Dispatch
14. Operating Committee
15. Maintenance
16. Metering
17. Force Majeure
18. Dispute Resolution
19. Guarantees, Warranties, Indemnity and Liability
20. Insurance
21. Disclaimer
22. Assignment

3.1 Introductory Statements

This first article of the PPA identifies the contracting parties and may state in the form of "whereas" clauses steps the parties have accomplished or intend to take upon signing the PPA. Fewer clauses would be necessary for standard PPA.

3.2 Definitions

Defined terms are provided for convenience and to be precise without repetition in the contract wording. Defined terms are limited only by the desires of the contracting parties. Definitions would be used in the standard PPA.

3.3 Term of the Agreement

Typically PPA's become binding when executed. However, the operative provisions do not become effective until operation begins, which date will be determined by actual events. Termination date of the agreement should set forth a specific number of years following the date of initial operation both for non-standard and standard PPA's. The operating life of the agreement would be related to the repayment period and to the expected life of the physical facilities.

It is recommended that a non-binding provision be included for extension of the agreement. The procedures and their timing could be set forth in order that any agreed upon extension could be determined well before the expiration of the agreement.

Another matter which should be given consideration in a non-standard PPA is the disposition of the generating facilities upon contract termination. GOP may desire an option to acquire the Seller's facilities upon termination. If the parties agree to include such an option, the procedures and timing and possibly some of the terms of acquisition should be set forth in order that if the option is exercised, all the terms and conditions of acquisition can be determined and agreed prior to termination of the PPA. This option would not be included in the standard PPA.

3.4 Seller's Facilities

This article places an obligation on the Seller to design, construct, operate and maintain the necessary generating facilities. The Seller and Purchaser would agree in advance upon minimum specifications of the facilities to be installed. Seller would not engage contractors not identified in the proposal without consent of the Purchaser. The Seller is required to meet these specifications. The Purchaser must be given right of access to inspect facilities during construction and installation as well as all repairs, replacement or maintenance activities following initial operation.

It it will be required for the Seller to provide a construction phase performance bond.

3.5 Testing

The PPA should describe the arrangements for testing of all facilities to meet the requirements of the specifications. This provision would not be required in the standard PPA, except for certain interconnection facilities. The testing procedures should cover:

a) Interconnection facilities provided by the Seller
b) Each generating unit or set and its auxiliary components
c) The entire station in operation

The Seller should be prohibited from connecting any set to the Purchaser's system until the Purchaser gives approval through proper notice to do so pursuant to satisfactory completion of inspections and tests of certain interconnection facilities and of pre-connection tests of the sets.

The Purchaser will be responsible for determining what tests are to be performed and the Seller responsible for detailing the specific test procedures. The PPA should state the time limits, as necessary, for exchange of information, developing rules and procedures, commenting and agreement of the parties. Adequate notice provisions for dates of tests and opportunities for appropriate personnel to be present and to receive and review test data should be provided.

Provision also should be made for timely resolution of any test disputes in order that remedies be effected for any deficient facilities and that conforming facilities be approved for operation as expeditiously as possible. It is recommended that the Expert described in 3.8.2 resolve such disputes.

3.6 Completion and Initial Operation

Completion, or the date that operation commences, is when all the operating tests are completed satisfactorily. It is the date upon which the operative provisions of the PPA become effective. It also determines the termination date of the agreement.

A target or required date of completion should be included in the PPA with a best effort on the part of the Seller to meet the date. There will be significant incentive on the part of the Seller to meet the date because that is when payment begins for the Seller's fixed costs in a non-standard PPA.

The standard PPA would not subject the facility to the same generating equipment tests required in the non-standard agreement. The standard agreement would simply provide that the facility deliver power continuously at full rated capacity for, say, 72 hours or alternatively at 80 percent capacity factor for an entire month, excluding designated off peak hours. The latter test is recommended for projects delivering firm capacity. If firm capacity is not being sold, only energy as available, no test would be needed, except for interconnection facilities.

3.7 Energy Delivery and Scheduling

3.7.1 Delivery

The point of delivery of the energy purchase and sale will be at the high voltage side of the station step-up transformers. This is very near where the energy is best metered. Such a point of delivery also eliminates need to determine station uses under the agreement. This means that generating capacity determinations will be net capacity at delivery rather than gross capacity before deducting station uses. The Seller retains title to and accepts all responsibility for power on the generating side of the point of delivery and the Purchaser on the other side of the point of delivery. The same provision would be included in the standard PPA.

It would be appropriate for the agreement to state explicitly that all power not required for station use or other stipulated uses shall be delivered to the Purchaser and none delivered to any other party. The stipulated uses might include the associated industry in the case of cogeneration, a generating plant community or other specified industry in the proximity of the plant.

3.7.2 Scheduling

Preliminary scheduling of power delivery shall be on an annual basis for planning and budgeting purposes by both parties. The proposed schedule will be initiated by the Purchaser for review by the Seller soon enough before the year begins for timely exchange of information and comments. Similarly the planned maintenance scheduling shall be in parallel with the preliminary delivery schedule, with the Seller specifying the amount of time needed for planned maintenance for each generating set and the preferred sequencing. The Purchaser shall have the right to specify the months during the year when the planned maintenance may be scheduled.

In a system with a significant amount of hydel such as WAPDA's, the preliminary annual scheduling may benefit from a seasonal updating or revision at such time as the amount of hydel generation for that season can be forecast with better accuracy. Such seasonal schedule revisions will be designed to fit the needs and practices of the Purchaser's system.

A monthly schedule of hourly delivery and spinning reserve requirements is provided by the Purchaser prior to the beginning of each month. The Purchaser will have flexibility to modify this schedule each day prior to the day of delivery because of unanticipated load demands or availability of other generating resources.

The Seller will exercise best efforts to supply the hourly scheduled energy delivery and spinning reserve. However, in the event of a forced outage or partial outage the Seller promptly notifies the Purchaser and is relieved of the delivery obligation to the extent of the magnitude and duration of the outage.

The Purchaser takes delivery of the energy as scheduled, except during emergency conditions on the system. Upon notice, including through automatic dispatch if provided, the Purchaser immediately may reduce scheduled energy delivery during emergency conditions or increase delivery to the extent spinning reserve has been scheduled.

Minimum quantities of energy scheduled for any month, for six-month periods and for each year as provided in the Hub Chowki draft are not recommended. In the standard PPA Purchaser accepts all energy delivered by Seller; therefore scheduling provisions are not required, except for relief from taking delivery during certain emergencies.

3.8 Price for Energy

3.8.1 Three methods are recommended for establishing price for purchases of private sector power.

a. Avoided cost price

This is the computed cost of facilities not built and energy not generated by WAPDA as a result of the private sector project. This method is used for price in a standard PPA used to test the market for private sector development of small industrial or commercial cogeneration or renewable resource projects. The price would have two components. Payment is made for the capacity component only if firm power is delivered. The capacity price would be derived from the cost of gas turbines or other generating capacity determined by WAPDA. Energy price would be derived from expected marginal energy costs on WAPDA's system. The price with this method would be lower than prices in methods (b) and (c).

b. Bid Price

The price established in response to a bid invitation would be used either in a standard or non-standard PPA. This method will be the most commonly used by WAPDA.

c. Comparable Cost

This is a cost based approach to pricing related to the cost to WAPDA of developing a comparable project. This method is most applicable to larger projects and unsolicited proposals, but could be used for any size. It is used to review and evaluate proposals and to determine what costs are appropriate in establishing the price. In this regard it must be applied with judgement in order to provide reasonable incentive for Sellers to propose and build plants.

3.8.2 What costs are included in setting comparable cost price

This discussion applies only to method (c) in 3.8.1. The Seller's estimated costs form the basis for determining purchase price. This includes both the costs associated with initial investment and the cost annually of operating and maintaining the facility. These estimated costs are reviewed by the Purchaser using its estimated cost for a comparable project. In making the comparison consideration must be given to any costs that a private sector developer would have that WAPDA does not have.

The initial investment cost used in price determination is an expected cost determined before the project proceeds. The Seller assumes the risk of meeting the budgeted costs. The elements of annual costs used to determine price should be separated into the following components:

(a) Debt service and principal on the expected cost of completing and testing the facility to meet specifications.

(b) Fuel used at an agreed upon heat rate. It should be an expected heat rate prior to construction and should include the items discussed in section 3.8.6. The Seller would assume the risk of meeting the agreed upon heat rate and would receive the benefit if the actual heat rate is better.

An alternative approach, but not preferred would be to stipulate a heat rate, a small amount lower than expected for which seller would bear all the risk. The facilities would be tested prior to completed operation to determine actual heat rate. It could be agreed that an actual heat rate better than that stipulated would be shared in some proportion between Seller and Purchaser in determining the energy price. This method would be used only if the parties are unable to agree on expected heat rate.

(c) Management, general administration and other staffing for operating and maintaining the facilities.

(d) Spare parts and replacements

(e) Insurance

(f) Taxes and import duties

(g) Return on shareholder's equity

3.8.3 Pricing structure

Tariffs for purchase of bulk power typically consist of separate pricing schedules for capacity and for energy. The capacity pricing schedules relate to fixed costs associated with the capacity while the energy price incorporates the cost of fuel and other costs that vary with the amount of energy delivery. This pricing structure is recommended for both the standard and non-standard PPA. For any project where firm power is not delivered or purchased the capacity component would not be applicable.

A single energy pricing structure was developed for the Hub Chowki draft agreement at the request of GOP. The price structure developed for that draft incorporated the elements of a 2-part rate into the single rate. It provided for monthly payment of all fixed costs of ownership regardless of delivery in the month. It allowed economical dispatch of the generating plant by the Purchaser. This pricing structure could be used in the non-standard agreements. Its disadvantage is that it may be more difficult for dispatchers to use. The single energy pricing structure is described in the Hub Chowki draft. Either pricing structure could be used in PPA's which specify a target capacity factor. The target capacity factor relates to performance incentives and penalties. The pricing structure is independent of capacity factor of operation.

3.8.4 Pricing Incentives

For both the standard and non-standard PPA's it is recommended that the energy pricing structure be designed to provide performance incentives for delivery during the time most important to WAPDA. This could be during peak hours daily or during the critical months when demands are high and hydel capability is low.

For the WAPDA system delivery is most important during the critical months. A very simple pricing incentive would be a premium rate on energy delivery above 60 percent capacity factor for some or all of the months January through June. This incentive could be applied in other months if the need for energy is high enough on WAPDA's system. This incentive is easily applied to the energy component of the 2-part pricing structure recommended, but could also be designed into the alternative single energy pricing structure.

In the standard PPA the capacity payment would be made only if the Seller meets established criteria. The criteria recommended is performance at a minimum of 80 percent capacity factor during the critical delivery months on WAPDA's system. Capacity payment would be made for the following year only if the established criteria are met.

3.8.5 Pre full-operation price

Before the station begins full operation a considerable quantity of energy could be produced in testing and operation of the completed units prior to completion of the entire station. The price for this pre full-operation energy should include all variable costs plus an incentive for the Seller to deliver discretionary energy that the purchaser finds economic to schedule.

3.8.6 Payment for other services

The Seller would desire payment for certain other services which likely would be performed in the course of normal operation. Separate charges for these services depend upon whether the Seller incurs additional costs not anticipated or covered in establishing the base energy price. It is recommended that for convenience of pricing and billing, these costs be estimated and reflected in the determination of price initially.

(a) Spinning reserve: There is a real cost of fuel and added operation and maintenance in providing spinning reserve. This cost could be captured in the initial base energy price through the heat rate determination. The agreed upon heat rate could be set at a level that would anticipate an estimated amount of spinning reserve.

(b) Reactive Power: The ability to provide reactive power would be included in the equipment specifications provided by the Purchaser and would be included in the estimated construction costs. It is recommended that the initial price reflect the extent to which reactive power during operation is expected to increase electricity losses and decrease the maximum productive capacity of the generators.

(c) Frequent starts: There is a cost in shutting down and starting up units. Base load generation is not expected to have frequent starts. The cost of expected starts should be included in determining the initial base energy price.

3.9 Price Adjustments Related to Cost

It will be necessary to specify in the contract which components of the electricity price are subject to adjustment and what changed conditions would merit adjusting the price. For standard PPA's the only price adjustment would be in the energy price. The adjustment could be indexed to an appropriate fuel price. Capacity payment in standard agreements generally are fixed for the term of the agreement without adjustment.

For non-standard PPA's some elements of fixed costs represented in the price will be adjusted as well as variable costs. The following price adjustments for changed conditions should be considered.

(a) Fuel costs would be indexed to track actual fuel prices in the fuel purchase agreement. Since fuel is such a large component in the electricity price, fuel costs should be adjusted monthly.

(b) Inflation in Pakistan would apply to labor costs and to spares and transport of any items directly related to the local economy.

(c) Taxation changes should be cause to adjust the purchase price.

(d) Foreign Exchange rate changes on interest and return on equity will be addressed in the Implementation Agreement without provision for adjustment in the PPA.

Formulae for adjustment of each component of purchase price for each of the items subject to adjustment would be developed and included in the PPA (or an attached schedule). Appropriate indices or parameters to be used in the formulae will be specified in the agreement.

3.10 Price Reduction Related to Performance

The recommended pricing provisions provide significant incentives to the Seller for controlling costs, for efficient operation and for ability to deliver energy during critical periods.

Since the standard PPA provides that the capacity component will not be paid unless the performance criteria are met,no further price reduction in that agreement is recommended. The non-standard PPA is a take or pay contract and the Purchaser pays monthly costs of ownership regardless of avialability; therefore, it is appropriate to provide penalties for failure to perform at some reasonable level. The performance standard should allocate equitably between the risks of operation to Seller and the desire for capacity to be available when needed by the Purchaser. The Seller is responsible for the extent to

which capacity is available and the Purchaser is responsible for the extent to which the capacity is loaded in any hour. The appropriate measure of performance by the Seller is the availability of generating capacity, not its loading. Unfortunately capacity availability is not a metered quantity. It can be measured by meter only when scheduled energy delivery plus scheduled spinning reserve is equal to full available capacity or when actual delivery is less than the amount scheduled.

3.10.1 Performance Measurement

An approach to performance measurement was developed for the Hub Chowki draft PPA, in response to desires expressed by GOP, which measured performance in daily peak hours, peak months and the entire year. The method required recording performance measurement each hour for the entire year.

It is described more fully in the Hub Chowki draft. While the method is designed to provide a comprehensive and true measurement of performance, it is cumbersome and subject to disputes or manipulation during some conditions of scheduling.

Coopers and Lybrand developed some possible alternatives to the Hub Chowki approach, but these too had disadvantages. The methods considered limited dispatch flexibility, were cumbersome, subject to dispute or placed the Seller's return on equity at risk of Purchaser's energy delivery schedules.

It is extremely important that the method of performance measurement be simple to administer by the plant and system operators of the parties, that it not be restrictive of dispatching and that it be derived from verifiable measured and recorded quantities. To meet these objectives a less comprehensive performance measurement for the non-standard PPA is recommended.

3.10.2 Recommended Performance Measurement

For the WAPDA system having capacity available during the critical months of the year is of primary concern. Performance penalties tied to these months would be proxy for penalties related to peak daily and annual performance. If the plant is unable to perform during 3 to 6 critical months of the year, then its peak daily and annual performance also will be deficient. Thus penalties associated only with critical months meet most of the performance objectives of a more comprehensive approach without all the disadvantages.

It is presumed that WAPDA would schedule energy delivery at full plant capacity during most of the hours of the critical months. Performance measurement with such conditions is simply determined from the quantity of energy actually delivered during those hours. Inasmuch as capacity availability is paid for every month in the non-standard PPA, the Purchaser should have the right to call on delivery intermittently on short notice, if necessary, only to meet peak loads. In months where energy is not previously scheduled at full capacity, or if Purchaser wishes to change schedule on short notice, alternate criteria for

performance are needed. The criteria could be a requirement to deliver on reasonable short-term notice a specified number of times during the month.

The steps for measurement of performance when scheduling flexibility is not required are as follows:

1. For each of the designated critical months, the delivery schedule submitted by Purchaser to Seller at least 30 days prior to the critical month is used to determine the hours to measure performance.

2. Those hours in the schedule in which full plant capacity (less any planned maintenance previously scheduled) is scheduled for delivery become the performance measurement hours. Purchaser must take delivery in those hours except in the event of an emergency.

3. Performance is determined by dividing actual measured delivery during performance measurement hours by the full plant capacity (less planned maintenance) during the same hours.

Any performance below 60 percent will be subject to penalty. The amount of the penalty could be scaled to its maximum at 40 percent performance.

In critical months when WAPDA desires scheduling flexibility on short notice or does not desire to schedule delivery at full plant capacity, the following alternative method of performance measurement will be used.

Availability of the generating capacity will be tested 4 times during the month. Each test will consist of scheduling the full plant capacity (less planned maintenance) upon at least 12 hours notice for 12 continuous hours of delivery. The minimum time interval between tests will be 5 days. The capacity factor of operation during those 48 hours becomes the performance measurement for the month. Performance below 60 percent would be penalized as in the other method.

3.11 Payment and Billing

The billing procedures will be designed to track the pricing provisions, the adjustments in prices and the reductions in price related to performance, including all supporting computations each month. Billing with standard PPA's will be simpler than with the non-standard.

3.11.1 Computation of bills

Monthly billing for the standard PPA must include the following data and computations:

(a) Energy delivered each hour of the month
(b) Computation of total energy payment
(c) Comp[illegible]n of capacity payment if Seller qualifies

(d) Computation of energy price adjustment, if any. Monthly billing with the non-standard PPA includes the following data and computations:

i. Energy delivered each hour of the month
ii. Computation of energy payment
iii. Computation monthly capacity payment
iv. Computation performance penalty if the month is a critical performance month
v. Computation of price adjustments, if any.

3.11.2 Notices

The PPA should specify the maximum number of days after the month ends that the Seller shall submit the billing computations to Purchaser. It would set a limit in number of days following receipt of the bill that Purchaser has to inform Seller of a billing error. The method and place of payment and the due date will be clearly set forth. A provision for penalty for late payment of 1 percent per month would be appropriate.

3.11.3 Letter of Credit

The Purchaser should provide a self renewing letter of credit equal to the cost of energy for one month's billing. The Purchaser would increase the value of the letter of credit to maintain an amount at least equal to the cost of one month fixed cost and energy. Payment would automatically be made pursuant to the letter of credit if Seller has not received payment from Purchaser within 60 days of the due date.

3.12 Interconnection and Communication facilities

It will be necessary for the parties to coordinate closely in the planning, design and inspection of electrical interconnecting and communication facilities. The facilities installed by Seller must be compatible with and meet the Purchaser's system needs. The requirements for a standard PPA would be similar even though the facilities may not be as extensive. The standard PPA could be supplemented by WAPDA with a standards guide to its interconnection and communications requirements.

3.12.1 Transmission and Switchyard

The PPA would require Purchaser to design, construct, maintain and operate the connecting transmission, transformation and switchyard facilities. The completion date would be specified to provide interconnection for testing purposes. The Seller must have right of access to the switchyard to inspect and maintain any of its interconnecting or communication facilities.

3.12.2 Protective Devices

The Purchaser should specify the electrical protective devices required on Seller's facilities. The Purchaser also should specify how such devices will be set, controlled, operated and when tested for system protection during operation. The Purchaser must have right of access and inspection at all times with reasonable notice.

3.12.3 Communication Facilities

The PPA will set forth the operating data required from the Seller during operation and in what form that data will be measured, monitored or recorded and by what means it will be communicated to the Purchaser. The requirements for voice, data transmission, on-line instruments and automatic controls will be clearly specified to meet the operating and information needs of the Purchaser's system.

3.13 Operation and Dispatch

In the standard PPA since the Purchaser must take deliveries, the only operating provisions needed would be for interruption of deliveries in the event of an emergency on Purchaser's system, force majeure or need to interrupt for repair or maintenance of equipment affecting delivery. Purchaser will be required to restore delivery as soon as possible, exercising prudence.

Additional provisions for the non-standard agreement include a requirement that Seller perform according to best efforts to meet Purchasers schedule and for the facilities to respond to any demand whether automatic or otherwise from Purchaser. It may be necessary to define what constitutes a request from the dispatcher. Provision is also made for Seller to perform whatever interconnection facilities or generating equipment inspections or tests may be necessary following outages, replacement or repair. Forced outage definition notices and remedial measures associated with forced outages are included. The obligation of the Seller with respect to reactive power and voltage control may be specified.

3.14 Operating Committee

It is recommended that an operating committee of the parties be established for the non-standard PPA. It may not be necessary, but should not be precluded, with the standard PPA.

The Committee would consist of three representatives o each party. Its purpose would include but not be limited to:

a. Forum for coordination and general communication between the parties.

b. Establish procedures that may be necessary to implement provisions in the agreement.

c. Jointly investigate questions and problems that may arise and develop fair and equitable solutions in efforts to avoid disputes.

d. Determine what technical questions other than those specified in the agreement will be referred to an Expert and define such questions for submitting to an Expert for resolution.

3.15 Maintenance

The non-standard PPA will define planned maintenance and set forth procedures.

The standard agreement could set forth the season in which planned maintenance is preferred when firm capacity is provided.Otherwise this provision would not be needed.

In the non-standard agreement the distinction between long-term and short-term maintenance should be made. Long-term or planned maintenance for each generating unit is scheduled every year several months before time. Short-term maintenance is that which can be scheduled from only a day to less than one month ahead. Short-term maintenance is related to unforeseen equipment problems that must be given attention before very many operating days. By providing coordination of notices and scheduling, between the parties, such problems can be removed from the forced outage category to a short-term schedule primarily for the benefit of the Purchaser.

For planned maintenance the Seller furnishes Purchaser a proposed schedule early enough before the beginning of the year for review and response from WAPDA.

The Seller specifies the order in which various units of the facility are to be scheduled. Purchaser specifies the month in which planned maintenance is to be accomplished. Modification of schedules set before the year are changed with mutual agreement.

Some agreements provide a limiting number of days a year for planned maintenance. Days not used in any year are accumulated for the occasional major overhaul that is required from time to time.

3.16 Metering

Metering provisions would be included in the standard PPA as well as in the non-standard.

Meters are provided, installed and maintained by the Purchaser and provisions in the PPA should address the following items:

1. Their specific location and adjustments for losses to the point of interconnection is needed.
2. Right of access for all reasonable purposes by the party on whose facilities the meters are installed to the other party.
3. Meters are to be sealed and the seals broken only for testing, inspection and adjustment and only when both parties have reasonable notice to have representatives present.
4. The frequency of inspecting and testing.
5. The accuracy tolerances to be allowed.
6. Action required and procedures, including billing adjustments, if meters are found to be deficient in accuracy.

3.17 Force Majeure

A force majeure provision is included in both the standard and non-standard agreements.

Events that are covered (or not covered) by force majeure excusing performance are defined. Notices in the event of a force majeure are specified and the actions required of the non-performing party. Remedies of the affected party to the effects of certain force majeure may be addressed.

3.18 Dispute Resolution

3.18.1 Operating Committee

For the larger projects with negotiated contracts an operating committee as described in 3.14 can be effective in maintaining good operating relationship between the parties and in minimizing the number of disputes that may rise above the administrative or operating level. It is recommended that this committee be given broad enough duties and power to investigate matters referred to it and resolve whatever problems it can.

3.18.2 Expert

Coopers and Lybrand suggested the use of an "Expert" to resolve certain disputes of a strictly technical nature.

It is recommended that this suggestion be adopted. An Expert is a person appointed by agreement of the parties who is qualified by education or experience to address and render a decision on the matter under dispute. The PPA would set forth the procedure for appointing an Expert, providing for appointment by an independent authority if the parties are unable to reach agreement on the appointment themselves.

Matters which could appropriately be referred to an Expert would include equipment testing, adequacy of planned maintenance schedules and any matter that the operating committee agree is appropriate for the Expert.

3.18.3 Arbitration

It is recommended that disputes which cannot be resolved by the operating committee or an Expert, be referred to arbitration under the rules of the International Chamber of Commerce. The parties would have to set forth the procedures and rules for arbitration.

3.19 Guarantees, Warranties, Indemnity and Liability

This provision is contained in both the standard and non-standard PPA. It sets forth the guarantees and warranteies that each party makes to the other and the limits of each party as indemnitor to the other.

3.20 Insurance

Insurance is a provision for both types of PPA. It sets forth the general liability insurance requirements of the Seller. The endorsements and evidence of insurance required are set forth.

3.21 Disclaimer

Since the Purchaser will review certain plans and design and inspect equipment of the Seller, the Purchaser should disclaim responsibility for the feasibility, reliability or performance of the facility subject to review.

3.22 Assignment

Both the standard and non-standard PPA, includes a prohibition against the assignment or disposition of any facility, duty under the agreement or interest without the express consent of the other party. Appropriate definitions and notice requirements are provided.

3.23 Other

The parties may desire to include other provisions in the non-standard PPA.

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Economic Analysis: Summary

The economic analysis for this Project Paper comprises efforts to look at the project level and national level aspects of the private power project. The fundamental assumption underlying the economic analysis is that private generation supplements the public grid of WAPDA/KESC. The key issues in the economic analysis include:

- o Impacts of new supplies on the power supply/demand balance,
- o Impacts of private power on the finances of
  - WAPDA
  - Government of Pakistan
- o Impacts of private power on the economic well-being of Pakistan including
  - GDP
  - external balance
  - financial markets

A. Pakistan's Supply/Demand Balance in the Power Sector

Pakistan currently experiences severe shortages of power during peak demand periods of the year. These capacity shortages have ranged up to 1600 MW annually. In addition to the capacity shortages, there are currently electric energy shortages of about 250 GWh annually, about 1% of total generation. Estimates using both WAPDA and survey data indicate that loadshedding at this level costs Pakistan $50-80 million annually in lost output and increased costs.

The total volume of the capacity and energy shortages depends on two major factors:

- o The status of the reservoirs behind the Tarbela and Mangla dams, and
- o The operability of the system's thermal units, especially the gas turbines.

In the recent past, both WAPDA and KESC have relied increasingly on operation of the gas turbines to meet both peak demands and intermediate demands. These gas turbine units use diesel as the primary fuel. As a result, WAPDA's consumption of middle distillates far exceeds its use of fuel oil. Operation of

gas turbines at the current level is normally considered excessive. However, without such use of these gas turbine units, the nation would experience energy shortages during intermediate and base periods in excess of 1,000 GWh annually, almost 4% of total generation.

Without private power, loadshedding will grow throughout the Seventh Plan period. By 1992-93, the absence of private power will lead to:

- o Loadshedding of up to 2,000 MW at peak, more than 1300 MW even with load management and full reservoirs,

- o Electrical energy shortages during intermediate periods requiring continued reliance on gas turbines to generate the supply.

Public Sector Investment Plans: The baseline unofficial projection for the next Five Year Plan includes 1330 MW of private power in the form of the Habibullah Mines coal plants, 130 MW, and the Xenel/NIDC plants, 1200 MW. With completion of these units and full implementation of the WAPDA/ KESC program, the system will still be short of peak capacity by more than 800 MW at the end of the plan. The only feasible way to reduce the load shedding is to:

- o Reduce demand via conservation and load management,

- o Manage the shedding of load more efficiently than is the case at present.

If the WAPDA and KESC investment plans are only partially implemented, then the electricity supply situation could deteriorate significantly. At 65% implementation (i.e, about 3500 MW of new WAPDA/KESC capacity), peak capacity loadshedding will reach 3500 MW on the standard forecast and 2800 MW even with load management. More important, energy shortages at both peak and intermediate periods will exceed the capabilities of the system's gas turbines. Without private power energy shortages could reach more than 10% of total generation by 1992-93. Without load management, the total is expected to exceed 5,000 GWh. Even with reduced load, the total energy not delivered will exceed 3,500 GWh.

A private power program will reduce the severity of a partial implementation of the public sector investment plans. Specifically, a program that could be funded entirely by USAID's contributions to the PSW would reduce peak capacity loadshedding down to about 3,000 MW by the end of the plan. More important, the energy shortages would be reduced by 10% without load management and by more than one third with load management.

A larger scale program, the type envisioned specifically by the current efforts of the World Bank and Energy Wing planners, would further cut the impacts of 65% success in WAPDA's investment program. For peak demand:

- o Capacity shortages would fall to 2,200 MW without load management and 1,600 MW with it.

- o Energy shortages at base, intermediate, and peak periods would be largely eliminated. Reliance on gas turbines would fall significantly.

B. Economic Impacts of the Project

Types of Benefits: From the standpoint of the national economy the private power program has five benefits:

- o Reductions in economic costs of capacity loadshedding (i.e.,load not met at peak),

- o Reductions in costs of meeting intermediate and baseload demands from gas turbines,

- o Increased output of industrial and and agricultural commodities as a result of increased power system *reliability* at intermediate and base loads,

- o Mobilization of additional foreign equity contributions to the economy, and

- o Savings of foreign exchange through increased efficiency and use of domestic resources

C. Economic Rates of Return

The net benefits to Pakistan come from two sources. The first is the output benefit of additional capacity. The second is the cost-savings benefit from reduced use of gas turbines for intermediate load. In this program the cost-savings benefits outweigh the output benefits.

A Minimal Investment Program: The smallest program envisioned, one that can be funded entirely by USAID's contribution to the PSW, will result in net gains to the country's economy of at least $125 Million. If oil prices rise, the net benefits to Pakistan rise as well. With oil at $35/barrel, the savings to the country overall would exceed $300 Million in present value terms.

Large Scale Programs: Larger private power investment programs will imply using private power for baseload capacity. Two different programs were investigated. The first comprised one 600 MW baseload unit plus 220 MW of other capacity. The second is the standard 1330 MW scenario. The results for the large scale programs indicate that the investments will:

- o Achieve acceptable rates of return provided
  - -the baseload units are credited with the full value of the investment in capacity (i.e., they are paid for 60% capacity factors)
  - -construction costs are kept at their predicted levels

- o Increase the net wealth of Pakistan by upwards of $150 Million. With rising oil prices, net present values could exceed $400 Million over 20 years.

Failure to credit the plants with their full capacities may result in large net losses to Pakistan (details are contained in the Economic Issues Paper). The analysis that was performed showed that large capital intensive facilities are a poor way to meet intermediate loads. This is especially true for the proposed coal facilities.

Overall, we found that the proposed investment scenarios could achieve the following Economic Rates of Return:

Scenario	ERR (%)	
	Low	High
1 - 370 MW	23	40
2 - 830 MW	15	25
3 - 1330 MW	8	14
3* - 1200 MW	10	17

* - Xenel/NIDC only at 60% capacity factor.

As the investment size rises, the economic rate of return falls. This is due largely to the displacement of the most costly economic inefficiencies by the first 830 MW of capacity. After that point additional electrical energy will primarily displace less efficient steam plants. Indeed, the range of returns for the Xenel/NIDC investment is (and should be) about what WAPDA could obtain from similar investments in oil-fired capacity.

D. Macroeconomic Impacts

National Level: We found that all of the proposed projects could save $30-60 Million annually in fuel imports. This effect comes just from the increased efficiency of using the

new units to displace gas turbines or less efficient steam units. In overall terms, the savings in fuel unambiguously outweighed imports of capital equipment. The results for the investment scenarios investigated were:

Scenario	NPV of External Balance ($M)
1 - 370 MW	+ 80)
2 - 830 MW	+ 340) for oil at $15-20/bbl
3 -1330 MW	+ 500)
3* -1200 MW	+ 400)

Domestic Credit: Presently the Government of Pakistan finances most of its Annual Development Plan from foreign grants/loans and domestic borrowings. Regardless, none of these programs appears large enough to cause crowding out problems in the domestic credit markets. The largest project, number 3, will require Rs 4,000 Million of domestic financing over 3 years. That figure represents just under 2% of current gross domestic investment during its construction period. In addition to the small size relative to the overall economy, the net inflow of foreign private equity should increase the financial resources available in domestic credit markets.

Other Macroeconomic effects will be similarly slight. Sectorally, the domestic construction industry can benefit from exposure to improved power plant construction technologies likely to be brought in by the private developers. The private power programs envisioned are unlikely to strain domestic construction resources or skill trades.

ECONOMIC ANALYSIS REPORT

1.0 Framework of the Analysis

1.1 The Role of Private Power

Pakistan currently experiences severe loadshedding during 5-7 months each year. During the last two years about 1 percent of the total load was shed. From 1982-1985 more than 5 percent of total load was shed annually. Both figures would have been higher were it not for the extensive use of gas turbines to meet intermediate loads (see Sections 3.2 and 4.1).

To reduce or eliminate load shedding, WAPDA and the Government of Pakistan have proposed to nearly double the current generation capacity by 1993. These plans, though ambitious, do not provide sufficient capacity to eliminate load shedding by the end of the next Five Year Plan (1992-93). Moreover, the planned expansion of WAPDA's generating capacity may be difficult to implement from both financial and organizational points of view. (See the discussion of generation investment plans and load shedding in Section 3.2).

USAID has agreed with the Government of Pakistan to pursue private power as a supplement to the WAPDA expansion plans. In addition, the cooperation of the World Bank, Japan's OECF, and other donors raises the likelihood of private financing for a significant contribution to the WAPDA system.

The economic analysis in this Project Paper looks at the costs and benefits to Pakistan of private power which supplements the public generation capacity. The case of private power replacing public capacity is not considered.

1.2 Power Tariffs and WAPDA Institutional Improvement

The report contains a discussion of how tariffs relate to the ability and willingness of WAPDA/KESC and the Ministry of Water and Power to pay for privately produced power. On the institutional side, the analysis is performed with appropriate reference to the ongoing efforts of WAPDA/KESC, USAID, and the Rural Electrification Project contractors to improve the power distribution system in the country.

Information on future tariffs is necessarily speculative. Consequently, this analysis looks at the impacts of varying levels of tariffs on the ability and willingness of WAPDA to enter into power purchase agreements. In this regard, we consider the external and internal forces that influence tariff levels. In addition, the analysis covers the key economic elements of the proposed power purchase agreement, capacity costs and fuel costs.

Institutionally, the analysis is done as if a separate distribution entity were purchasing power from WAPDA/KESC Generation and Transmission. This means that we shall assume that the distribution system will be able to carry whatever is produced from the public system or from private sources. Moreover special tariff issues in the distribution side - e.g., low rates for rural households, special tubewell rates - will not concern the analysis. All that matters is that the average kWh tariff meets the internal and external financial requirements.

1.3 Overall Economic Issues to be Addressed

The benefits and costs of private power to Pakistan will be addressed with respect to three main criteria:

- Reduced loadshedding,
- Attractiveness of private power vis-a-vis other investments, and
- Macroeconomic impacts - e.g., balance of payments, overall government budget, and sectoral allocation of Government of Pakistan resources.

2.0 Private Power as a Supplement to the WAPDA Grid

In this section we discuss the scenarios of possible private sector power development during the period of the Seventh Five Year Plan. The scenarios were developed with an eye to projects already proposed, and those which could be built during the period of the Plan. Under the current project design, the reflows from the borrowers to the private sector load window (PSW) will be used to fund new power sector investments. For the analysis of USAID's investment in the PSW, it has been assumed that USAID's funds would be entirely exhausted during the Seventh Plan. Given the probable 4-8 year grace period to be included in the loan terms, reflows from USAID's portion of the PSW will not result in any new private power plants until the Ninth Five Year Plan (1998-99 to 2002-03). However, it is likely that the resources available from other donors will provide *funding* for additional investments during the period of the Eighth Five Year Plan (1993-94-1997-98. The scenarios presented below consider only those investments that are made during the Seventh Plan period.

2.1 *Timing and* Nature of Potential Projects

Several factors determine the ease and speed with which new investments in the power sector can be built. The most important of these factors include the following:

- o Ease of reaching an acceptable power purchase agreement,
- o Ease of assembling a *reasonable* financial package,
- o Risk tolerance of investors,
- o Technologies which influence construction schedules, design, and procurement.

These items are discussed in detail elsewhere. In the present context, varying these factors could result in three distinct patterns of investment. The first would be characterized by total reliance on standard packaged technologies. Construction *requirements* are likely to be minimal and financing needs well understood. Such small *projects* would not be out of line with investments in other areas already undertaken by Pakistan's private sector. Typical plant investments should range from $10 million to $100 million - about the range of some *current projects* in textiles, chemicals, and other manufacturing industries.

Scenario 1

Power Plant Type	Rating (MW)	Commissioning
Sm. Steam Turbines	2 x 15	1992-93
Gas turbine	1 x 100	1992-93
or	2 x 50	
Diesels	12 x 20	1992-93
Total	370	

The first program represents the minimum and lowest risk approach to starting a private power effort. In addition, it represents, in quantitative terms, just what can be expected from USAID's efforts alone. That is, given, the $125 million that USAID will commit along with the 70% of financing that must be raised from other sources (including equity), something like 370 MW is the maximum installable capacity.

A second scenario envisions a mix of small and large facilities, some aimed at base loads, others at peak and intermediate ones. In the second case, we assume that the Private Sector Window (PSW) proves proficient in working with smaller operators. At the same time, the success in reaching workable power purchase agreements encourages larger operators, for example, the Xenel group. The addition of a large facility, requiring extensive infrastructure investments, represents a real change from the small, off-the-shelf technology of Scenario one.

Scenario 2

Power Plant Type	Rating (MW)	Commissioning
Sm Steam Turbines	4 x 15	1992-93
Gas turbine	1 x 50	1992-93
Diesel	6 x 20	1992-93
Oil (steam)	2 x 300	1992-93
Total	830	

The third scenario is the one that is currently the basis of both the World Bank's and Energy Wing's considerations. It consists of three power complexes generating baseload power. This investment would require about $300 Million in PSW funds, about 44 percent of the total available to the PSW. In terms of the factors listed above, this scenario will move up the scale of complexity and risk to some degree. The coal site at Lakhra requires extensive infrastructure investments. Efficient and environmentally acceptable combustion of the coal will require relatively innovative technology. This element carries with it the greatest potential for delay. The additional, oil-fired steam capacity at NIDC, on the other hand, is probably less risky than either the Lakhra project (HML) or the Xenel project. The high degree of reliability at NIDC is due mainly to the use of four units to generate the 600 MW rather than Xenel's two..

Scenario 3

Power Plant Type	Rating (MW)	Commissioning
Coal (Quetta)	2 x 15	1991-92
Coal (Lakhra)	2 x 50	1992-93
Oil (Xenel)	2 x 300	1992-93
Oil (NIDC)	4 x 150	1992-93
Total	1330	

As an outer limit of the analysis, consider a plan for private power that would completely eliminate load shedding by the end of the Seventh Plan. Such a program, in conjunction with a fully implemented WAPDA/KESC investment program, would provide almost 2 GW of new capacity. It is essentially the same as the previous effort with the addition of 600 MW of peaking turbines. Such an investment, using modular, well-proven technology, and pipeline quality gas, should not increase the technological or financial riskiness of the overall Scenario.(1) Modular investments can always be shifted around in time, if the underlying demand situation changes.

Scenario 4

Power Plant Type	Rating (MW)	Commissioning
Coal (Quetta)	2 x 15	1991-92
Coal (Lakhra)	2 x 50	1992-93
Oil (Xenel)	2 x 300	1992-93
Oil (NIDC)	4 x 150	1992-93
Gas Turbines	3 x 100	1991-92
"	3 x 100	1992-93
Total	1930	

This scenario will remain purely hypothetical since the use of pipeline quality gas has been ruled out for private power projects. However, it remains indicative of the type of effort that would need to be mounted to completely ride the nation of loadshedding. Perhaps, as low-BTU gasfields are developed during the Eighth Plan, such investments may be feasible.

2.2 Potential Contributions to Supplies

Scenarios one and two can likely be accommodated by the WAPDA/KESC system regardless of changes in current demand trends. That is, they are small enough so that, at a minimum, these projects provide the system with some sort of reserve margin. The latter two scenarios will both make substantial contributions to the system's baseload capacity. Additions to baseload capacity of this magnitude are equivalent to the entire public thermal baseload additions scheduled during the Seventh Plan period.

In the economic impacts Section (#4), we plan to show whether sufficient demand exists for this power. That is, what are the likely courses of demand in the three categories of peak, intermediate, and base loads. Also in Section 4 there is a discussion of the values of different types of power.

The public sector's investment choices and implementation should have a notable impact on the feasibility of various of the private power investments. For example, were WAPDA/KESC to be fully successful in adding the proposed 5100 MW of new capacity during the Seventh Plan (see Section 3.2), then the value of the privately produced power to the system would fall from its current level. That is, load shedding in industry would be reduced and presumably, easier to

schedule. However, should implementation fall behind, as it traditionally has, then both the energy and the capacity will be useful to the system. In Section 4, we relate the supplies available from the different private power implementation scenarios to the demands from the nation's power system.

(1) This is true provided the pipeline-quality gas is made available for private power.

3.0 Economic Background of the Project

3.1 Macroeconomic Background

During the past ten years, Pakistan has succeeded in maintaining rates of economic growth above 6%. During the most recent period, FY84-86, GDP growth averaged 6.9% in real terms (above the Plan target of 6.5%). This growth was the product of the following annual sectoral growth rates:

agriculture - 3.9%
industry - 8.3%
services - 7.4%

The last Five Year Plan the Sixth, called for a more rapid expansion in the commodity producing sectors than in services. In addition, the diversification of output into minor crops and exported manufactures was slow to materialize.

Government Budget and Fiscal Situation

During the period of the Sixth Five Year Plan, revenues for the Government of Pakistan doubled in nominal terms, from Rs 52 billion in 1981-82 to Rs 105 billion in 1986-87. Government revenues remained stable at 16-17% of GDP throughout this period. Major revenue sources include direct taxes, import duties, and other indirect taxes at 14%, 35%, and 47%, respectively.

At the same time, expenditures went from Rs 71 billion to Rs 155 billion. As a result, the Government's deficit more than doubled, from Rs 17 billion to Rs 45 billion.

On the expenditure side, the largest share of the budget is the current expenditure item. This covers normal government operations. At the beginning of the decade, current expenditures ran at about 65% of total expenditures. The remainder, Rs 25 billion, was for the annual development plan (ADP). In the latest fiscal year, current expenditures had risen to 72% of the total. As a result, spending for the ADP has risen less quickly than total Government expenditures. The net effect of the sharp rise in current expenditures is that this item now exceeds total revenues. This means that the total ADP, including equity contributions for externally financed projects, is financed from abroad and from the sale of Government securities domestically.

In 1986-87, net external resources comprised 37% of the budget deficit, Rs. 16.3 billion. Sales of short term securities (1 year), at Rs 23 billion, and borrowing from banks, at Rs 4.7 billion, financed the rest. In the recent past, a far greater share of the budget deficit was financed from domestic resources. In FY 1984-85, for example, net external borrowing accounted for just 14% of that year's deficit. On the domestic side, the share of non-bank borrowing has generally moved up since 1981-82. In 1984-85, for example, banks provided more than 50% of the debt financing for the Government.

External Balance

With regard to the external balance, Pakistan's national accounts show that imports have exceeded exports by more than $3 billion for each of the past six years. The current account has generally been in deficit by more than $1 billion. The prime contributor to the difference between the trade balance and the current account has been the more than $2.8 billion in annual remittances from Pakistani workers abroad.

The external accounts are balanced by the following items:

	average range, 1980-1986 ($M)	
private lending (long term)	65-190	(net)
private lending (short term)	50-250	(net)
official grant aid	275-500	
official medium & long term loans	350-600	(net)
private dir. investment (long term)	120-300	(net)

(note: net figures represent receipts minus payments for that year. As a result, these figures can be quite volatile from year-to-year.)

As the figures show, the net private transfers into the economy are less than two thirds the net official transfers. Of the total private transfers into the economy over the past six years, 15-30% was in *short term* financing, largely for trade.

The outlook for the Seventh Plan period, 1988-89 to 1992-93, is for workers' remittances to drop below $2.5 billion annually. Such a drop is equivalent to the total annual long term private inflows during the present Plan period. Official capital inflows can be expected to remain essentially stable through the period of the Seventh Plan. After that, however, levels of official assistance and finance are less certain.

3.2 The Power Sector

3.21 Energy supply and demand

Pakistan's net final commercial energy consumption has increased from 9.5 million tons of oil equivalent (toe) in FY1980 to 14.2 million toe in FY1985, or about 8.2 percent annually. In this latter year, oil and natural gas each supplied 38-39 percent of the gross commercial energy supply, while coal and hydro supplied 7 and 15 percent, respectively (see Tables 3.1 and 3.2). Alternatively, petroleum products accounted for 44 percent of net final commercial energy consumption, while natural gas, electricity, and coal accounted for 35 percent, 11 percent, and 10, respectively.

Electricity consumption in the Pakistan system increased from 10160 GWH in 1979/80 to 21745 GWH in 1986/87, while peak demand grew from 2476 MW to 5225 MW. Roughly 36 percent of consumption in the latter year was by industry, 30 percent by residential consumers, and 19 percent by agriculture. At the same time, 77 percent of WAPDA's 5.28 million consumers were residential, 17 percent were commercial, 3 percent were industrial, and 2 percent were agricultural.

The maximum effective demand on the Pakistan system of 5225 MW in 1986-87 was relatively constant during the year (due in large part to the existing capacity constraint) and compares with an installed capacity of 6627 MW (see Table 3.3). The system has its annual maximum peak in May and June of each year. The true peak is unknown due to capacity constraints. This peak coincides with low water in the main reservoirs to produce the maximum loadshedding of the year.

Pakistan's capacity is divided between 3727 MW of thermal capacity and 2900 MW of hydro. Due to factors relating to seasonal water flows, irrigation needs, and limitations on water storage, however, hydro capacity drops to about 1100- 1500 MW during the dry season. Thermal capacity may also vary somewhat during the year due to such factors as ambient temperature, maintenance (e.g., forced outages and repairs, and availability of fuel supply. The result is a serious generation capacity shortage during such dry periods leading to significant load shedding (as much as 1600 MW in January 1986) and an increased incidence of unplanned outages. For example, the recent USAID - funded study of the economic costs of load shedding and outages in Pakistan indicated that in 1984/85 typical industrial consumers experienced 175 hours of load shedding and 29 hours of unplanned outages, with 80 percent of such outages occurring between January-June.(2) Such power supply disruptions clearly impose significant economic costs, as discussed in Section 4.1 below.

WAPDA has also estimated the amount of loadshedding in its system in recent years. For 1986-87 the figure they estimated was 262 GWH with three months, January, June, and December accounting for more than 70% of the total Total loadshedding in some earlier years was significantly higher, 1687 GWh in 1984-85, for example. The WAPDA total for 1986-87 corresponds roughly to figures predicted by the team for the current year, about 272 GWh in 1987-88. The final total for this year, of course will depend on reservoir levels and on the reliability of the country's thermal power plants.

TABLE 3.1: PAKISTAN COMMERCIAL ENERGY BALANCE FY 1980
('000 TOE)

Item	PRIMARY ENERGY					SECONDARY ENERGY		
	Oil	Natural Gas	Coal	Hydro	Nuclear	Electricity	Refined Products	Total
A. Gross Supply								
1. Local Prod	478	5,763	702	2,074	-			9,017
2. Imports	4,042	-	65	-	-		1,633	5,740
3. Exports	-	-	-	-	-		993	993
4. Bunker Sales	-	-	-	-	-		365	365
5. Stock Change	55	-	-	-	-		60	5
TOTAL AVAILABLE	4,575	5,763	767	2,074	-		215	13,394
B. Conversion								
1. Ref. Prod	4,318	-	-	-	-		4,318	
2. Electricity	-	1,064	8	2,074	-	3,996	50	
3. Conv Losses	257	-	-	-	-	2,637		2,894
4. T&D Losses	-	547	-	-	-	420		967
NET SUPPLY	0	3,352	759	-	-	939	4,483	9,533
C. Consumption By Sector								
a) Energy								
1. Dom	-	334	12	-	-	214	686	1,246
2. Comml	-	153	-	-	-	80		233
3. Indus	-	2,274	741	-	-	373	225	3,613
4. Agric	-	-	-	-	-	188	260	448
5. Trans	-	-	-	-	-		2,368	2,368
6. Other	-	-	e	-	-	84	701	791
b) Non Energy								
1. Ferti	-	591	-	-	-			
2. Lubes	-	-	-	-	-		243	243

a/ Imported crude 3,910 T = 4,042 TOE

b/ Local crude 478 TOE and Imported crude 3964 TOE

c/ Conversion efficiency at 0.34

d/ Same per cent of losses observed in terms of GWh

e/ Sector wise consumption in the same ratio observed in terms of GWh

f/ Including 40,000 TOE of LPG

Source: ADB

TABLE 3.2: PAKISTAN COMMERCIAL ENERGY BALANCE, FY 1980
('000 TOE)

Item	PRIMARY ENERGY					SECONDARY ENERGY		
	Oil	Natural Gas	Coal	Hydro	Nuclear	Electri	Ref. Products	Total
A. Gross Supply								
1. Local Prod	1,278	7,775	1,001	2,913	82			13,049
2. Imports	4,153	-	471	-	-		2,339	6,963
3. Exports	-	-	-	-	-		154	154
4. Bunker Sales	-	-	-	-	-		140	140
5. Stock Change	159	-	-	-	-		61	98
TOTAL AVAILABLE	5,590	7,775	1,472	2,913	82		1,984	19,816
B. Conversion								
1. Ref Prod.	5,121	-	-	-	-		5,121	
2. Electricity	-	2,051	14	2,913	82	5,989	929	
3. Conv Losses	469	-	-	-	-	3,952		4,421
4. TED Losses	-	749	-	-	-	480		1,229
NET SUPPLY	0	4,975	1,458	-	-	1,557	6,176	14,166
C. Consumption By Sector								
a) Energy								
1. Domes	-	875	7	-	-	449	822	2,153
2. Comml	-	230	-	-	-	125	25	380
3. Indus	-	2,712	1,444	-	-	554	795	5,505
4. Agric	-	-	-	-	-	248	225	473
5. Trans	-	-	-	-	-		3,350	3,350
6. Other	-	-	7	-	-	181	649	837
b) Non Energy								
1. Ferti	-	1,158	-	-	-			1,158
2. Lubes	-	-	-	-	-		310	310

a/ Imported crude 4,018 T at 1.0338 TOE per tonne of crude
b/ Based on total processed crude 4,018 T (imported) and 1,436 T of local crude
c/ At 0.34 efficiency of thermal generation
d/ At 23 per cent observed in terms of GWh
e/ Sector wise consumption in the same ratio observed in terms of GWh
f/ Including 75,000 TOE of LPG

Source: ADB

Table 3.3: Existing Installed Capacity (6/87)

Hydroelectric (MW)	Installed	Max	Min
Tarbela 1-10	1750	2000	570
Mangla 1-8	800	1000	400
Warsak	240	240	80
Others (9 sites)	110	70	40
Subtotal	2900	3310	1090

Steam Turbine		
WAPDA	Installed	Effective
Multan	260	240
Faisalabad	132	120
Guddu	640	600
Sukkur	50	40
Hyderabad	43	30
Quetta	15	12
REPCO & MESCO	29	29
Subtotal WAPDA	1169	1071
KESC		
Bin Qasim	420	400
West Wharf	96	74
Dual Fuel	15	11
Kanupp (nuclear)	137	70
Korangi	382	357
Subtotal KESC	1050	912

Gas Turbines		
WAPDA		
Faisalabad	200	195
Shahdara	85	70
Guddu	400	400
Kot Addu	400	400
Kotri	130	121
Quetta	68	63
Subtotal WAPDA	1283	1249
KESC		
Korangi	100	80
SITE	125	100
Subtotal KESC	225	180

System Totals	Installed	Max Effective	Min Effective
Total WAPDA	5352	5630	3410
Total KESC	1275	1092	1092
TOTAL	6627	6722	4502
Captive	500	500	250

Source: WAPDA Statistical Handbook, 1987

3.22 System expansion plans

As a consequence of the generation capacity shortages described above, the GOP is planning to invest significant resources in generation capacity over the next plan period. For example, the three year Public Sector Investment Priority Program for FY 1986-88 allocated Rs. 32.46 billion (roughly 25 percent of total outlay) to the power sector to finance a "core investment program" for WAPDA/KESC.

Overall, the draft Seventh Five Year Plan FY 1989-93 calls for another 6596 MW of generation capacity, divided between 5266 MW of capacity supplied by WAPDA and KESC and 1330 MW of private power (and consisting of 2168 MW of hydro and 4428 MW of thermal, see Table 3.4).

There is general agreement, however, that system capacity is unlikely to increase by this amount due to funding and institutional constraints. The Government's equity share of the planned public sector program, about Rs. 30 billion, represents more than 10% of the projected Seventh Plan ADP's. Significant transmission investments are also planned in order to connect new thermal or hydro generation capacity to load centers, and to reinforce system reliability.

The potential demand for electricity is predicted to continue growing rapidly--current estimates are in the range of 10-11 percent per year. Efforts directed at energy conservation and load management may reduce this growth rate to the 9-10 percent range. Factors contributing to this growth in electricity demand include:

1) a relatively high sustained rate of GNP growth (projected to continue at about 6.5 % per year),

2) the GOP's commitment to eliminate load shedding and to electrify 90 percent of villages by June 1990, and

3) pricing policies which continue to subsidize the cost of power to agricultural and residential consumers and which support relatively high prices for competing fuels (see below).

Even with complete fulfillment of the Seventh Five Year Plan objectives, there will still be almost 900 MW of load shedding in 1992-93 (see Table 3.5). Because of this sustained growth in demand and the constraints on capacity expansion described above, actual electricity consumption is apt to continue to be supply constrained in the near future.

Table 3.4: Power Plants in Construction/Planning

	Nameplate	Min Effective	Commission Date
1988-89			
Guddu 5-6	200	200	1988
Multan (rehab.)	-120	-120	1989
Kot Addu 5-8	400	400	1989
Bin Qasim	210	210	1989
Subtotal	690	690	
Pakistan Total	7317	5192	
1989-90			
Kot Addu 9-10	200	200	198[illegible]
Jamshoro 1-3	670	670	198[illegible]
Bin Qasim	210	210	199[illegible]
Guddu 7-8	200	200	1990
Other comb. cycle	80	80	1990
Retirements	-42	-42	1990
Subtotal	1318	1318	
Pakistan Total	8635	6510	
1990-91			
Multan (rehab)	120	120	1990
Jamshoro 4	210	210	1990
Guddu 9	100	100	1990
HML 1-2 (pvt)	130	130	199[illegible]
Subtotal	560	560	
Pakistan Total	9195	7070	
1991-92			
Multan 1-2	420	420	199[illegible]
Private oil-fired	1200	1200	199[illegible]
Tarbela 11-12	864	288	199[illegible]
Bin Qasim 5	210	210	199[illegible]
Lakhra Coal	150	150	199[illegible]
Subtotal	2844	2268	
Pakistan Total	12039	9338	
1992-93			
Tarbela 13-14	864	288	1993
Mangla 9-10	200	67	1993
Chashma hydro	240	80	1993
retirement	-120	-120	1993
Subtotal	1184	315	
Pakistan Total	13223	9653	

Table 3.5: Peak Demands on the WAPDA System (middle case)
High Load Growth, Complete fulfillment of Investment Plan

Year	Demand	Capacity		Load Shedding (in MW)	
		Low	High	Max	Min
1987-88	5674	4052	6010	-1622	376
1988-89	6313	4673	6585	-1640	272
1989-90	7008	5859	7772	-1149	764
1990-91	7834	6353	8276	-1471	442
1991-92	8768	8404	10835	-364	2067
1992-93	9570	8687	11901	-883	2331

Note: High load growth continues trends of recent years, Figures include 1330 MW of Privately generated power. Assumes 10% reserve margin at all times.

As Table 3.5 shows, the *baseline* demand forecast for the WAPDA/KESC system is for demand to grow strongly and for loadshedding to continue. There is one significant exception to the predicted levels of loadshedding; a successful program of energy conservation and load management. By reducing the rate of growth of both peak demand and overall demand, such a program could cut the loadshedding at peak to just under 200 MW by the end of the Plan period.

In both of these "baseline forecasts, Pakistan would rely on three essentials:

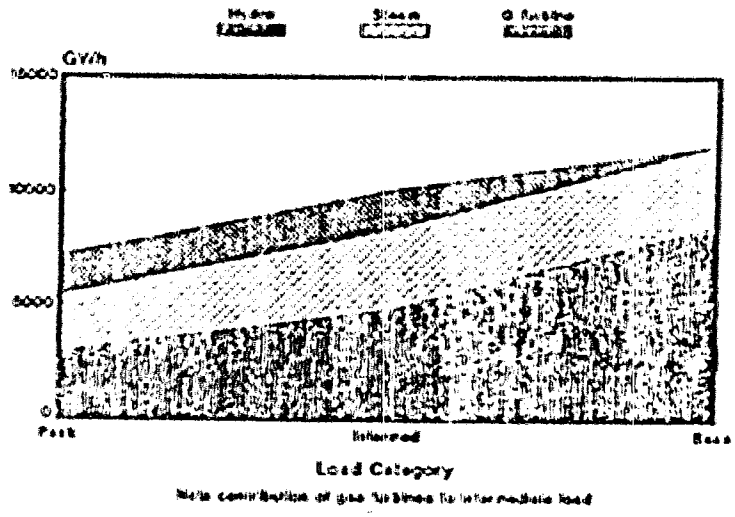
1) Successful implementation of all of the WAPDA/KESC power plants planned for the Seventh Plan period.

2) Completion of 1330 MW of baseload capacity from private oil and coal power plants.

3) Continued reliance on gas turbines to avoid shedding of intermediate loads.

As the figures below show, both WAPDA and KESC currently satisfy a significant proportion of their intermediate loads by using gas turbines at 25-40 percent plant factors. WAPDA has estimated that some of the newer turbines operate as much as 45 percent of the time. Such a practice eliminates or reduces loadshedding during the middle of the day. However, the high use of the system's peaking plants exacts a toll in reduced reliability at peak demand times (forced outages) and another cost in the high fuel consumption of the peaking units.

FIG. 3-1: PAKISTAN'S ELECTRICITY SUPPLY, 1987
Contributions to Components of Demand



Examining the supply demand balance without the 1330 MW of private power, we found that the system would suffer loadshedding during almost all of the Seventh Plan's Peak load (Figure 3.2). *By 1992-93 loadshedding at peak is* expected to reach more than 800 GWh, about three times the current level. Moreover, the capacity shortage can be expected to reach an annual maximum of 3500 MW with minimum capacity loadshedding of more than 500 MW throughout the year. An energy conservation and load management program can help reduce the peak loadshedding. However, peak loadshedding will continue to grow without the contributions of private power.

FIG. 3-2a: DEMAND AND SUPPLY PROJECTIONS, 7TH PLN
100% FULFILLMENT OF WAPDA/KESC PLAN, NO PRIVATE POWER

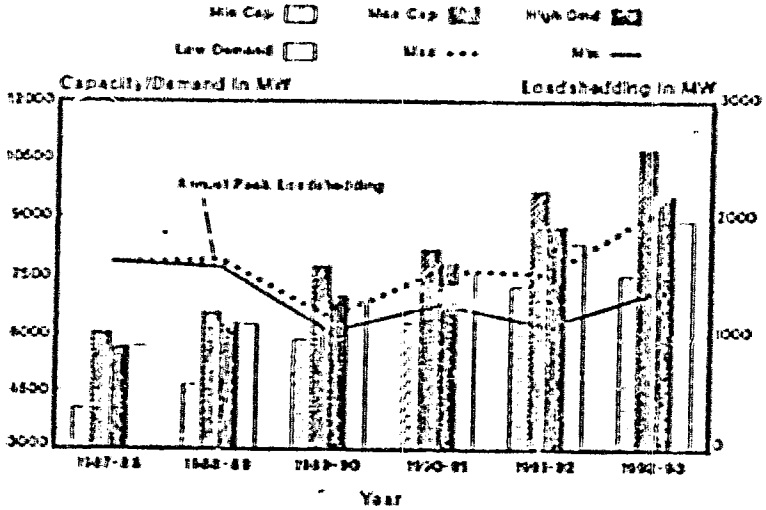
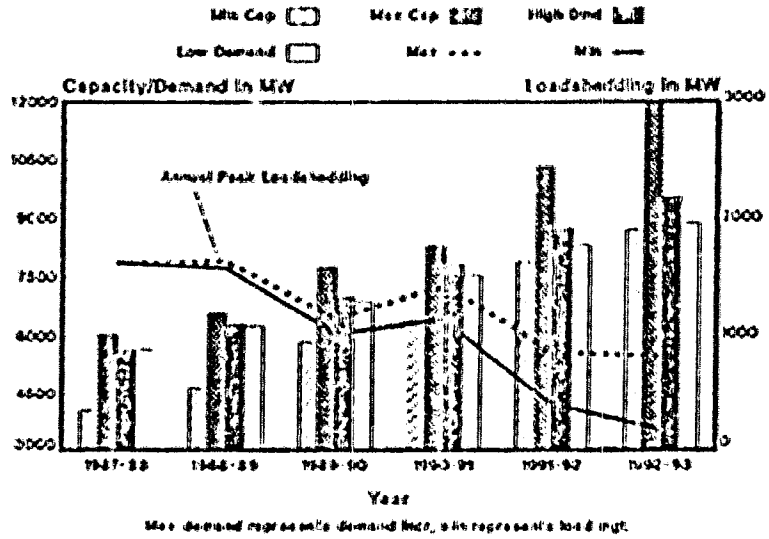
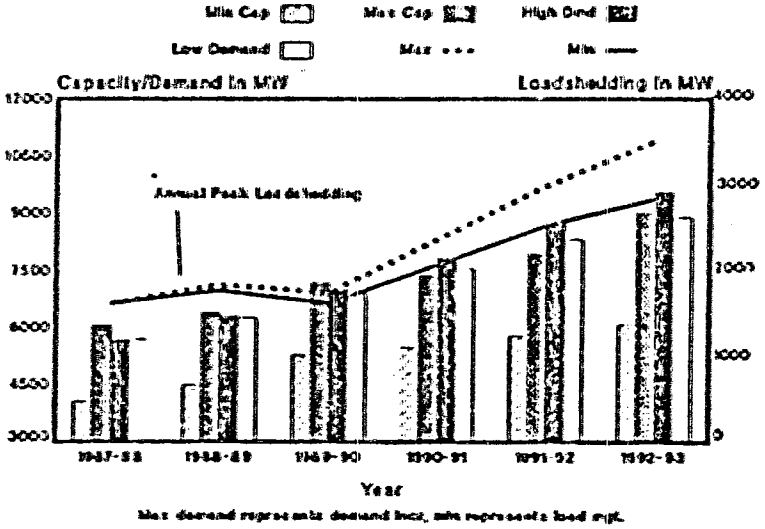


FIG. 3-2b: DEMAND AND SUPPLY PROJECTIONS, 7TH PLN
100% FULFILLMENT OF WAPDA/KESC PLAN,1330 MW PRIVATE PWR



One of the most important considerations relates to the potential for only partial implementation of the WAPDA/KESC investment program. As figure 3.3 shows, a 65 percent implementation rate by WAPDA/KESC would leave the system about 3500 MW short during the annual maximum peak and minimum hydro capacity. At best, the system would be 550 MW short during peak. More important, energy loadshedding would grow throughout the next Plan period. At peak periods, the amount of *load shed* would grow from its current 250 GWh to more than 2,750 GWh in the base case and over 1,800 Gwh even with load management. Equally important, the failure to bring on new baseload and intermediate capacity would result in growing energy shortages during those periods. Only by postponing rehabilitation efforts, retirements, and by running the gas turbines as baseload units could WAPDA/KESC meet demand.

FIG. 3-3: DEMAND AND SUPPLY PROJECTIONS, 7TH PLAN
65% FULFILLMENT OF WAPDA/KESC PLAN, NO PRIVATE POWER



3.23 WAPDA's Institutional Reforms

WAPDA has recently begun a series of institutional reforms - largely with technical assistance and financing from various aid donors - aimed at enhancing its efficiency and effectiveness. Generation planning has improved with acquisition of the WASP system planning model. There is still considerable need for further enhancement. USAID's Rural Electrification Project has funded technical assistance aimed at strengthening WAPDA's distribution wing (perhaps by creating a separate Distribution Authority) while improving distribution system planning, and improving financial management, customer services, and training. The possibility of allowing new entities to assume responsibility from WAPDA for power distribution in specific areas is also under consideration. Finally, efforts are underway to ensure the efficient integrated operation of the KESC and WAPDA systems.

3.3 WAPDA Tariffs

3.31 Recent trends

Tariffs are critical for any electric utility since they strongly influence its financial performance, the efficiency with which power is used, and the affordability of electricity. Current WAPDA tariffs are summarized in Table 3.6. They were most recently revised in November 1986, July 1985, and 1981 (see Table 3.6, below). Such revisions have addressed both the structure and levels of tariffs. For example, the 1986 and 1985 revisions increased average tariffs by approximately 3.5 percent and 10 percent, respectively, while the 1986 revision extended the application of the fuel adjustment charge to larger residential consumers.

Tariff increases in recent years have been driven largely by the need to satisfy covenants associated with assistance provided by USAID, the Asian Development Bank (ADB), and the World Bank. Specifically, WAPDA has agreed to set tariffs at levels sufficient to finance 40 percent of its investment program (defined as the average of investments in the previous, current and subsequent year). loan funds were withheld by the World Bank between July, 1986 and October, 1986 until WAPDA made the tariff adjustment required to meet the self-financing requirement in FY1987. In general, though, WAPDA has been able to satisfy this self- financing covenant via the tariff increases described above.

The large investment requirements for WAPDA/KESC will force significant annual tariff increases to attain 40 percent self-financing during the Seventh Plan period. For example, ADB estimates that annual nominal tariff increases of about 12 percent will be required through 1993. Such increases are roughly consistent with similar estimates used by WAPDA and other Government entities. Purchase of private power can also affect WAPDA's ability meet its financial agreements. By charging full cost rates for power, private sector generation companies may change WAPDA/KESC's net operating income.

TABLE 3.6: KESC/WAPDA TARIFFS

Category	Connection/Demand Charge (Rs./KW/Month)	Energy/Charge (Rs./KWH)
1. Domestic		
i. 0-50 KWH	-	0.39
ii. 51-250 KWH	-	0.46
iii. 251-300 KWH	-	0.58
iv. 301-600 KWH	-	0.64
v. above 600 KWH	-	0.89
2. Commercial		
i. 0-100	-	1.28
ii. above 100 KWH	-	1.42
3. Industrial: 230/400 V		
i. Upto 20 KW	28.0	0.80
ii. 21 KW - 70 KW	31.0	0.80
iii. 71 KW - 500 KW	102.0	0.46
4. Industrial: 11 KV and 33 KV		
i. 501 KW - 5000 KW	90.0	0.41
5. Industrial: 66 KV and 132 KV		
i. greater than 500	96.0	0.41
6. Agricultural Tubewells and Irrigation Pumps		
i. SCARP	-	0.51
ii. Punjab and Sind	24.0	0.29
iii. NWFP and Baluch.	22.0	0.29

1/ Fuel adjustment charge applies to all consumers except domestic consumers below 300 KWH/month.

Source: DGNRER

A program to supplement public power production with private power will have two opposite effect on WAPDA's tariffs. First, as stated above, the cost item of WAPDA's balance sheet will increase by the amount of the power that is purchased. Such power exceeds WAPDA's current average revenue per kWh by more

than Rs 0.25. This means that the investment program outlined in Scenario one, for example, would add about Rs 95 million annually to the cost item. Since the private power costs are put into the fuel adjustment clause, all of this additional cost would eventually be passed on to consumers as higher average tariffs. However, by replacing high cost gas turbines at intermediate loads, private power can be expected to reduce fuel costs for those units by almost $70 Million annually. In other words, the net increase in WAPDA's costs would be under $30 Million annually for the first investment program.

If tariff reform continues, such power will come into the system at less than the retail tariff levels projected for 1992-93 of Rs 1.15/kWh. In other words, continued tariff reform should allow private power to enter the distribution system with little effect on tariffs.

3.32 WAPDA long run marginal cost (LRMC)

LRMC provides an estimate of the economic cost of supplying power within a grid. This cost estimate is often differentiated by time of day (i.e., peak or off-peak) and voltage level of consumption. Thus, LRMC provides a benchmark indicator of the level and structure of power supply costs which can be used as a basis, in conjunction with other financial or distributional considerations, for setting power tariffs.

The World Bank last conducted full LRMC study in 1979; and, this study provided the basis for reforms in both the structure and level of tariffs adopted by WAPDA in 1981. Despite these changes and subsequent partial adjustments in 1985-86, it is generally agreed that WAPDA tariffs, especially those for residential and agricultural consumers remain significantly below marginal cost (largely because of distributional reasons). This clearly is an important factor contributing to the power supply shortages described above.(3

An updated study of generation LRMC was completed in 1987. This study, which was part of a larger generation planning exercise utilizing the WASP-III model, estimated generation LRMC to be Rs. 0.70/KWh in 1986. (Rs. 0.76 at 1988 exchange rates) Such a generation cost implies retail tariffs in the range of Rs. 0.90 - 1.50/KWh.

It may seem paradoxical that WAPDA's tariff are less than LRMC and yet WAPDA's 40 percent self-financing requirement is being met. The reasons for this include:

1) The general discrepancies between financial measures used to assess self- financing and economic costs used to estimate LRMC,

2) The forward looking nature of LRMC compared to the inclusion of past and present year costs in the measure of self- financing used here, and

3) The exclusion (in a financial sense) of the costs associated with its hydro dams from WAPDA's books.

As a result of these factors, tariffs required to meet self- financing requirements are generally below those needed to reflect LRMC.

In light of the recognized need for tariff increases and reform, the ADB is financing a tariff study as a part of an overall effort aimed at achieving an efficient integration of KESC and WAPDA operations. This study now underway, includes a detailed look at tariff structures. At the same time, the World Bank is financing a related energy demand management study and is designing a second energy sector loan. The covenants associated with the World Bank's loan will likely serve as the centerpiece of electricity pricing reforms over the next few years.

3.33 Relative Energy Pricing Issues

The pricing of other energy products which compete with electricity in particular markets is also of relevance. Those energy products include petroleum products (kerosene, LPG, and diesel fuel) for domestic and agricultural consumers and natural gas for industrial consumers. When the price of one competing energy source is distorted (i.e., deviates from the economic cost of supply by more than the price of another energy source), then consumer choices are biased and efficiency losses occur.

The most obvious relevant case where such efficiency losses may occur in the energy sector involves electricity and petroleum products. Local prices for gasoline, diesel, and commercial/ industrial purchases of fuel oil are currently above *border* prices (or economic supply costs). The opposite is true for electricity. As the above discussion of electricity tariffs showed, the basic charges in the residential and rural sectors are so low that they do not even cover distribution costs, much less generation costs (see the Cost of Service Study performed under the Power Distribution and Rural System Expansion program consultants, 1986).

In the agricultural sector, for example, the low cost of electricity and subsidies of purchasing pumps has led to a sharp increase in the demands on the system for pumping energy. About 550 new connections are added each month. At the same time, the low cost discourages users from adopting water conservation methods of agriculture and of using their own diesel pumps, except during outages. The result is a demand that always runs ahead of possible supply and a commitment of WAPDA resources to a financially draining activity.

Given the high prices of petroleum products relative to electricity for final consumers, they have an incentive to "over consume" electricity for such purposes as industrial process energy, space heating, or domestic lighting. A similar, but perhaps weaker, distortion may also exist in favor of electricity and against natural gas for purposes of cooking.

In the electricity sector, price distortions have led to large increases in intermediate and peak loads. The average sale price of the electricity is lower than the cost of the fuel alone to generate that additional supply from gas turbines. The great increase in consumption of middle distillates for electric power generation in turn has led to the need to crack fuel oil to increase supplies. The overall price distortions, then, not only bias the use

of electricity, resulting in high generation and distribution costs, they also bias investment decisions in other sectors, including petroleum refining.

The current distortions in power sector prices have the following overall impacts:

1) Excessive demand for middle distillates for power generation,

2) Over-reliance on electric pumps in the agricultural sector,

3) A mismatch between revenues in the energy sector enterprises and costs of providing the services and products.

4) Under development of the natural gas resources and distribution system that is needed to provide adequate supplies to households and industries.

3.34 Implications for Private Power

The discussion in Section 3.2, above, indicates that there is a significant continuing shortage of power generation capacity and electrical energy in Pakistan at present. From our investigation of the situation, we concluded that:

- Investment resources available to the public sector are unlikely to completely eliminate this shortage in the near future given the expected growth in demand.

- Projected increases in demand will raise the general shortages to all periods of the day without private power investments.

- The economic costs of meeting intermediate loads impose severe costs on the generating system.

- Promised tariff reform should allow private power to fit into the current system without significant changes in tariff levels. The overall impacts of Scenarios one and two are less than $60 million annually at current oil prices. An increase in oil prices to the $25-35/barrel range would eliminate this differential entirely.

- Current distortions in the pricing system for all energy products bias both consumption and investment decisions. However, the extent of the current power shortage is such that supply and demand could only

be balanced in the short run at electricity prices well above the long run marginal cost of power.

The continued existence of generation shortfalls does not, create a prima facie economic justification for private sector investments in generation capacity (despite general agreement that an adequate power system is an essential precondition for sustained economic development). Nevertheless, it is clear from the discussion above that this efficiency would be enhanced by efforts to ensure that electricity itself is produced and utilized more efficiently in the Pakistan economy.

(2) In operational terms, WAPDA/KESC capacity is further reduced by power plant derating, excessive fuel consumption, and low availability (generally between 45 and 55% for thermal units). USAID and other donors are currently sponsoring efforts to improve power plant operations.

(3) One of the key activities of the WAPDA Distribution Wing's institutional improvements is a full cost of service study. This study is part of a complete inventory and revaluation of the Distribution Wing's assets.

4.0 ECONOMIC COSTS AND BENEFITS OF PRIVATE POWER

4.1 Benefits of Additional Generation Capacity

The fundamental assumption underlying the economic analysis of the Private Power Project is that private generation capacity will supplement WAPDA capacity. This means that private capacity investments provide a net increase in generation capacity and in energy produced for the national grid in Pakistan.

Pakistan will benefit from additional generation capacity since it: 1) leads to reductions in load shedding and unplanned outages (primarily between January- June), 2) makes electricity supply available to consumers who would otherwise remain off-grid, and 3) substitutes for other more costly generation units during periods of slack demand. In the first and second cases, economic benefits take the form of lower load shedding and outage costs and consumers' willingness-to-pay for substitute supplies (e.g., diesel autogeneration), respectively. In the third case, they occur because power can be supplied during certain intermediate demand periods at a lower economic cost than is available from WAPDA/KESC gas turbine units.

Considerable data on the economic costs of load shedding and outages for a sample of industrial consumers in Pakistan is available from recent USAID and World Bank financed studies. These studies estimated average load shedding and unplanned outage costs to range from Rs 2.8-6.6/KWh. This figure excludes the impacts of such power supply disruptions on GDP and exports. The first figure considers just the cost of making alternative supplies available during outages. The second measure incorporates both the value of lost or spoiled production, and the cost of indirect actions (such as the purchase of stand by power and night-time factory operation) taken to lower the direct costs of supply disruptions.

There were significant variations in these costs for different types of industries.(4) However, these estimates provide a clear indication of the value of incremental power generation capacity to the national economy. That is, these estimates reflect the following benefits from additional generation capacity:

- o Higher GDP and employment,
- o More efficient fuel use, and
- o Lower fuel imports per unit of output.

It would be incorrect, however, to impute from these estimates that each KWH supplied from private power generation is worth as much as Rs. 6.6. There are at least two reasons for this. First, only about 38 percent of electricity consumption is by industrial consumers. Other types of consumers clearly incur costs as a result of supply disruptions, but they are likely to be lower than for industrial consumers. Second, private power capacity will not be needed to reduce load shedding during periods when WAPDA's generation capacity is adequate. During such periods, private capacity can, at the most, substitute in the "merit order" for less efficient generating units.

kWh. In the economic analysis performed for this project, the cost-savings from reduced use of high cost generation sources were considered along with the value of adding capacity. At the present time each kWh that is generated on intermediate load by high cost gas turbines common to the WAPDA/KESC system costs about $0.034 (RS 0.60) more for fuel alone than does a modern low speed diesel (e.g., Hub Chowki). Such a figure does not include the excessive wear and tear on the gas turbine units and the reduced reliability such overuse creates.

4.2 Economic Returns to Private Power

The economic impacts for Pakistan of obtaining power from private sources were analyzed in terms of the three scenarios developed in Section 2. For the estimation of peak load benefits, we considered the avoided cost of constructing capacity to be used during the peak period. For cost-savings benefits, we looked at the difference between the costs of operating the new unit and an existing gas turbine or steam plant. The two units of merit that were computed were the economic rate of return of the project (ERR) and its net present value (NPV).

Investment costs were obtained from existing private power proposals and from World Bank and Government of Pakistan documents. Shadow prices for both foreign and domestic resources were obtained from the World Bank's Power System Study and from USAID's Lakhra coal study (1986). Oil prices were all border prices. Coal prices at Lakhra were those given in the USAID study for a large power plant rather than those contained in the HML proposal. Those latter cost estimates are more typical of small brickworks than of large power plants.

The four scenarios were run with oil prices varying from $15-35/barrel and with the firm capacity rating of the private baseload units varying from 40-60% and 65% in one case.

The costs of construction and operation and the resulting benefit figures were combined in an economic evaluation model. This model has been used to estimate economic and financial impacts of power plant investments in a number of other countries. For the current case, the model was modified to accommodate the different types of plants in the four scenarios. The time horizon of the analysis is 20 years and the costs and benefits are discounted at the World Bank's standard rate of 10% per year.

Scenario One: As was explained previously, this scenario is the one that can be supported entirely by USAID's contribution to the PSW. All of the additional capacity can contribute to reductions in capacity loadshedding while virtually all of the intermediate and baseload output replaces higher cost generation from gas turbines and older steam plants.

Since the plants included in this scenario were not intended to displace much baseload capacity, the analysis did not credit them with more than 2000 hours/year of capacity savings. This compares with the 5256 hours/year of baseload power that are expected from the Xenel facility. The Table below shows that this set of investments can yield returns that are in line with

Overall, the economic benefits of private power consist of the three types of benefits described above. Efforts are made in section 4.2 to estimate these benefits for possible private power development scenarios and then compare such benefits with the corresponding economic costs of such capacity additions.

Recent data from WAPDA on loadshedding indicates that the total volume of load that is shed is about 1600 MW at peak demand. This capacity insufficiency combines with a generation insufficiency to leave total electricity supply 200-300 GWh below demand. Projections developed for this analysis indicate that the generation shortages in the range of 300 GWh will continue into the first few years of the Seventh Plan in the absence of private power.

Using the estimates of the value of additional power supplies that were developed by the World Bank and others, we found that the value of eliminating *loadshedding* in the industrial sector is at least $25 Million annually. Adding in the household, commercial, and agricultural sectors may add another $25-40 Million annually. That is, *the* present insufficiency of power production costs Pakistan at least $50 Million and perhaps as much as $80 Million annually.

For the duration of the Seventh Plan, capacity loadshedding at peak will continue regardless of the contributions of private power. As long as capacity is limited, firms, individuals, and farmers will continue to suffer losses of *such a magnitude each year. Over the ten year lifetime* of the Private Power project, these losses *will* cost Pakistan between $300 Million and $480 Million - i.e., the discounted present value of the losses due to load shedding is with the investment cost of a sizable power plant. This indicates the value of adding capacity quickly versus waiting for WAPDA/KESC to catch up with demand.

In addition to these direct costs, there may be indirect costs to loadshedding as well. In particular, the absence of reliable continuous power supplies limits the investments that are made in continuous process industries. Unfortunately, the quantitative impact of such technological changes is difficult to ascertain.

The final general economic gain is the assumed improvement in operation and plant efficiency that private operators would bring. At the present time, many of the public sector plants are characterized by high outage rates, excessive fuel consumption, and derated capacity. The types of contracts and purchase agreements currently under consideration specifically include incentives to maintain plants in prime condition.

While the costs of peak loadshedding in increased plant costs and foregone output, are significant, the costs of avoiding loadshedding for intermediate loads is perhaps more significant. At the present time, WAPDA and KESC use their gas turbines as intermediate load units as well as peaking units. WAPDA data show that many of the gas turbine units are run as much as 40% of the time. This compares with the 10-15% typical of U.S. utilities.

By using the gas turbines so much, WAPDA avoids loadshedding at intermediate loads (35% of the time). However, such plants tend to have high fuel consumption. As a result, each kWh from these plants costs WAPDA well above the average cost of generation and well above its average revenue per

kWh. In the economic analysis performed for this project, the cost-savings from reduced use of high cost generation sources were considered along with the value of adding capacity. At the present time each kWh that is generated on intermediate load by high cost gas turbines common to the WAPDA/KESC system costs about $0.034 (RS 0.60) more for fuel alone than does a modern low speed diesel (e.g., Hub Chowki). Such a figure does not include the excessive wear and tear on the gas turbine units and the reduced reliability such overuse creates.

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Since the plants included in this scenario were not intended to displace much baseload capacity, the analysis did not credit them with more than 2000 hours/year of capacity savings. This compares with the 5256 hours/year of baseload power that are expected from the Xenel facility. The Table below shows that this set of investments can yield returns that are in line with

typical investments in other industries in Pakistan. The results are highly sensitive to the price of oil. Basically, the higher oil prices go, the more money these plants can save on intermediate and base loads.

Price of Oil ($/bbl)	ERR (%)	NPV ($M)
15	23.0	124.3
20	27.7	174.4
25	32.2	224.5
35	40.9	324.6

For oil prices in the ranges of recent years, the ERR centers in the mid-20% level. The NPV, computed at the low end of the range of loadshedding costs, is equivalent to a net addition to national wealth of at least $125 million. The net effect on the external balance is perhaps slightly positive since the imports of foreign capital equipment are outweighed by the fuel savings over just the first few years of operation. The net present value of fuel savings alone, $340 million over the 20 project lifetime, outweigh imported machinery costs of about $260 million. In addition there may be some additional exports generated by the project's output energy.

Scenario one is not large enough to have significant fiscal impacts with regard to the *Government of Pakistan's* budget. Nor is its demand on the private capital market, about $150 million or less, enough to cause crowding out of other investments.

Summing up, the expected impacts of Scenario one are:

- Net increase in national wealth of more than $125 million - i.e., it more than offsets the costs of loadshedding.

- Rates of return for the nation that are competitive with rates of return currently earned for private industrial investments.

- Net present external balance savings of more than $80 million over the life of the project.

- Negligible effects on Government fiscal balance or private capital markets.

Scenario Two: This investment program is described in Section Two as essentially similar to the first program with the addition of the Xenel portion of the Xenel-NIDC project. It would produce 820 MW of output, of which 720 are baseload supplies, the remainder peak and intermediate supplies. Unlike the plants in Scenario One, most of the supply in this scenario competes directly with planned WAPDA investments at Jamshoro. Thus, the results depend crucially not only on the price of oil but also on the capacity credit that is assigned to the Xenel facility.

Under any circumstances, the economic rate of return for the set of investments falls toward the rate of return more typical of WAPDA's own investments. This range, 15-25% at full capacity credit for Xenel, still compares favorably with the cost of financing. Moreover, such a total return would permit the purchaser to pay a price that yielded a rate of return to equity investors that is consonant with the guidelines currently under development.

If the large facility only receives a capacity credit for 40% of its potential output - i.e., if equivalent WAPDA capacity is built at the same time and is fully used - then the overall rates of return drop to single figures. However, even a 50% capacity factor will allow the large plant to retain an acceptable return. The results indicate that the Xenel plant is an expensive means of replacing gas turbines for intermediate loads. The Table below shows the range of results.

	ERR (%)			NPV ($M)		
Price of oil	Capacity Credit for Xenel					
	40%	50%	60%	40%	50%	60%
15	7.4	11.9	15.2	-65	67	156
20	8.0	13.7	17.9	-50	122	246
25	8.6	15.5	20.5	-35	178	335
35	9.9	18.9	25.4	-4	264	513

The results indicate that the investments necessary to implement this scenario can increase Pakistan's wealth by at least $125-150 million as long as the large facility is properly used. Macroeconomically, the investments in this scenario will have the following impacts on the external balance. If the competing WAPDA units are built and operated at full capacity, then the required investment for Xenel will overshadow the fuel savings from replacing the gas turbines. The net change in the external balance will be slight. If the WAPDA units are not used as a substitute for Xenel, then the net foreign balance impacts will be strongly positive. Annual net reductions in imports will exceed $40 million, through savings in both fuel and displaced imports of small generators. In addition, the increased supply of baseload power should reduce loadshedding losses in agriculture and industry, possibly raising exports or substituting for imports.

The large size of the Xenel facility will have a direct impact on the Government of Pakistan's finances. If the unit is built in addition to other similar facilities, then these units may compete for funding from foreign donors -e.g., support for Xenel through the PSW may come at the expense of support for some other plant through regular WAPDA borrowing. In the domestic financial markets, the large size of the Xenel facility can be accommodated without crowding out other borrowers only if it taps domestic finance through bond sales that are unavailable to the Government of Pakistan.

The important impacts of this Scenario include:

- o Dominance of the economic impacts by the large plant built by Xenel.
- o Reduced rates of return in comparison with options not available to WAPDA (e.g., Scenario one).
- o Net Present Value figures in the range of $150 million and up, provided that the Xenel facility is operated for maximum capacity contribution.
- o Net improvement in the foreign balance provided the investment does not compete with WAPDA's program.
- o Competition for funds in the domestic bond markets. The severity of the competition depends on whether the power in this scenario replaces or supplements WAPDA's investments.

Scenario three: Current Government of Pakistan plans call for 1330 MW in three plants to be completed before the end of the Seventh Plan. These plants are expected to reduce capacity loadshedding to less than 1000 MW by the end of the Plan. For the energy conservation and load management option, capacity load shedding will virtually disappear by 1993.

Energy shortages are expected to continue through the end of the Plan period, however. Without any conservation or load management, both peak and intermediate loads will continue to be short through the end of the Plan. Should the WAPDA/KESC investment program fail to achieve its full objectives, then all of the capacity and energy from this investment program will be needed to offset capacity and energy shortages.

The Scenario 3 program includes 130 MW of coal fired thermal capacity at Quetta and Lakhra. The costs of power from these facilities appear to run significantly higher than the costs of power from the 1200 MW oil fired plant. Consequently, the analysis indicates that the ERR and the NPV for this set of investments is well below those of the earlier alternatives. At 60% capacity credit, the ERR for oil prices in the current range is around 8-9% (see Table below). Only at high oil prices, will the ERR's and the NPV's approach the same values as the earlier sets of investments.

	ERR (%)		NPV ($M)	
Price of oil	Capacity Credit for Coal and Xenel/NIDC			
	50%	60%	50%	60%
15	1.7	8.1	-331	-79
20	1.8	9.7	-327	-12
25	1.9	11.3	-322	77
35	2.2	14.1	-313	233

The 50% scenarios are essentially a capital intensive means of producing intermediate and peak power. As such, they tend to be more expensive than other alternatives for meeting such loads. Even if the plant does in fact operate 70-75% of the time as was assumed for the analysis, the power will need to be valued at the maximum level for virtually all of those hours. Even when this is done, the power from the coal plants is more expensive than alternatives.

The main explanation for the high power costs lies with the high fuel costs. The Lakhra feasibility study sponsored by USAID found that the cost of coal from the Lakhra mines would range from $25-45/tonne in commercial quantities. Moreover, due to the poor quality of the coal, the plant efficiency is lower than that at a comparably sized oil facility.

Looking just at the Xenel/NIDC complex, the project's economics improve considerably. The ERR's go up about 2 percentage points in each scenario. More important, though, the NPV's rise considerably. The net gain to society is usually at least $100 million greater without the two coal plants than it is with them. The next Table details those differences.

	ERR (%)		NPV ($M)	
Price of oil	Capacity Credit for Xenel/NIDC			
	50%	60%	50%	60%
15	4.1	10.1	-205	16
20	4.2	11.9	-202	94
25	4.4	13.6	-197	172
35	4.6	16.7	-189	328

At high oil prices and maximum capacity credits, the NPV's for Pakistan simply approach but do not exceed the same values which can be provided by the smaller investment set, number one. One further extreme, a 65% capacity credit, will provide Pakistan with ERR's and Net Present Values in the same range as those for Scenario two.

The coal projects, on balance, will save the country foreign exchange. Annual fuel savings will amount to almost $30 Million at current oil prices. Over the twenty year project life, the coal plants will save more than $95 Million in foreign exchange in present value terms. That is, the present value of the fuel savings exceeds the present value of the imported plant and equipment by almost $100 Million. Such foreign exchange savings must be weighed against the net domestic costs (negative NPV) of the two plants, which exceed $100 Million in present value terms. In addition, the coal plants will provide at least an additional $20 Million in net benefits (domestic or foreign) as oil prices reach $35/barrel. The coal plants are not expected to have other significant macroeconomic impacts on either domestic credit markets or on the Government of Pakistan.

The larger Xenel/NIDC project will have only moderate impacts on Pakistan as a whole. As the financial analysis has indicated, this project is

ANNEX R
A.I.D. Experience With Private Sector Power Programs.

I. AID PROGRAMS IN PAKISTAN

The Energy Commodity and Equipment (ECE) program (a Commodity Import Program), the Energy Conservation Program, and the Lakhra Coal Mine and Power Generation Project, under the Energy Planning and Development Project, and studies of private sector power generation in Pakistan have resulted in the following lessons learned:

A. The private sector in Pakistan and private companies in the developed countries are seriously interested in making substantial, long term investments in power generation, as evidenced by the more than 10 proposals being explored in Pakistan. (Source: discussion with the GOP and private sponsors)

B. In structuring the selection process for private power projects, procedures for application, approval and accounting for use of funds must be streamlined as much as possible to meet the needs of private sector firms for rapid decisions and minimal paperwork requirements. (Source: AID CIP Project Evaluation & II Power, "An Analysis of the Commodity Import Program as A Mechanism to Finance Renewable Energy Transactions", January 1988.)

C. The experience with the unexpectedly limited use of the private sector portion of the Energy Commodities and Equipment program suggests that, in addition to complex and lengthy paperwork requirements, interest rate levels and other repayment terms can significantly effect demand for loan assistance funds. Thorough consideration to banking and financial requirements are essential prior to establishing a loan program. (Source: AID CIP Project Evaluation-1988)

D. The institutional capability in the GOP to implement a private power program must be significantly enhanced in order to deal with the complex electricity pricing, project solicitation,, and contractual agreement issues involved. (Source: Arthur D. Little, "Opportunities for Private Sector Power Generation in Pakistan", November 1986 and Ikgler, Bailly & Company, "Private-Sector Power Generation in Pakistan: Potential, Impediments, and Policy Issues", June 1986)

E. Professional financial advisors and institutions that have prior experience with nongovernmental project financing, capital market operation, project negotiation and project risk analysis should be involved in advising USAID and GOP from the beginning when establishing a private power program. (Source: Mathtech, Inc., "Involving the Private Sector in Pakistan's Lakhra Coal Mine and Power Generation Project: Lessons Learned" Draft, October 1986)

F. The GOP must allow the private sector some flexibility in proposing solutions to power generation problems and in negotiating final project agreements. (Source: Mathtech, 1986)

G. To attract private sector participation and private capital, power purchase rates for private power projects must allow sponsors to obtain adequate rates of return on their equity investments over the life of the project. (Source: Arthur D. Little, 1986)

II. AID PRIVATE SECTOR INITIATIVES WORLDWIDE

Since its inception, A.I.D. has supported programs to increase the participation of private enterprise in stimulating social and economic growth of developing countries. These programs have sought (1) to remove roadblocks to private business investment and operation, (2) to provide credit to businesses in developing countries, especially small and medium-sized businesses, and (3) to bring about institutional development and policy changes that would permit operation of free market systems.

There are numerous lessons that can be derived from this extensive experience that are applicable to this project:

A. Before specific projects can be successful, there must exist a favorable policy and institutional climate for the participation of the private sector. (Source: A.I.D. Bureau for Private Enterprise, Annual Reports various years; Hagler, Bailly & Co., "Nonutility Power Generation in India's States of Gujarat and Maharashtra: Potential, Impediments and Policy Issues", June 1987; Hagler, Bailly & Co., "Private-Sector Power Generation in Thailand: Potential, Impediments, and Policy Issues", November 1986; A.I.D.-sponsored Center for Privatization, Inc. various country studies; A.I.D., "Power Crisis in Developing Countries: Magnitude, Impacts, Solutions, and the Role of the Private Sector", a Draft Report to Congress, March 1988)

B. With many developing countries devoting over 25 percent of their development budgets to the power sector, one of the most serious constraints to the expansion of power generating capacity in developing countries is the lack of adequate financial resources. (Source: World Bank reports; A.I.D., Power Crisis Report to Congress, 1988; Arthur D. Little, 1986; Hagler, Bailly & Co., 1986 & 1987)

C. By introducing competitive market forces, the actions of private enterprises in developing countries can result in improved efficiency of operation and allocation of resources, thereby reducing costs of operating specific activities and attracting new sources of investment capital from private financial markets that are not accessible to governments or government-owned enterprises. (Source: Ibid.)

D. Private participation in traditionally government-owned and operated activities, such as electric power, can range from complete privatization of a sector to contracting out only specific services. Given institutional resistance, it is often best to focus on privatizing only specific components of a parastatal system, such as new generating plants, or distribution systems, rather than the entire system. This limited privatization approach has been proposed in Costa Rica, Thailand,

Sri Lanka and the Dominican Republic. Since 1985 in Sri Lanka, the Lanka Electricity Company -- a government-owned company organized to operate on a commercial basis with a view to eventual sale of company stock to the public--has assumed distribution functions in 10 local areas and has been successful in decreasing energy losses and accounts receivable and in improving overall service. (Source: Kappaz and Menendez, Draft "Nonutility Power Generation Study in Costa Rica", 1987; Asian Development Bank, "Terms of Reference - Institutional Strategy Study of LECO, Sri Lanka", February 1988; Center for Privatization, various reports; A.I.D., Power Crisis Report to Congress, 1988)

E. Given the high level of perceived political and financial risk, private firms from the host country and donor countries need assistance in developing and financing projects. This assistance includes identifying implementable projects, understanding legal and administrative constraints, preparing prefeasibility and feasibility studies, negotiating essential agreements, and obtaining needed short and long term debt and equity financing. (Source: Various reports supporting TDP feasibility study program, A.I.D. prefeasibility and feasibility study projects and PRE technical assistance programs, Department of Commerce overseas marketing and International Major Project Tracking System, OPIC feasibility study program, Eximbank Engineering Multiplier Program).

III. EXPERIENCE OF TURKEY IN PRIVATE POWER GENERATION

A. In developing and implementing its private power policy, the Turkish Government's premises are similar to those of the GOP; These premises are:

- Private Power is a means to raise additional capital from domestic and non-traditional foreign sources while not increasing the government's financial obligations;
- Private Power can improve efficiency of plant operation and thereby improve service by helping to end power shortages
- Private Power is seen as a means to avoid waste and inefficiencies of civil service and public sector operation of power systems; and,
- Private Power is envisioned to encourage competition and innovation in power sector.(Source: Dr. Charles Cicchetti paper on Turkey, UK and PURPA experience and with private power, 1988)

B. Turkey has used competitive bidding for small and medium-sized projects based on a set price of 65 percent of the retail price. The process used modified bidding folowed by negotiated contracts for its larger projects, yet none of the larger projects have been constructed. (Source : Cicchetti, 1988)

C. To ensure that export credit agencies (ECA's) of developed countries could provide direct loans or loan guarantees without soverign guarantees from the Government Of Turkey, substantial efforts were made to devise a debt security program acceptable to the ECA's. Ultimately,

limited governmental guarantees were required for private power sponsors to be able to obtain commercial financing. The Government Of Pakistan must also address the issue of backstopping security arranements for ECA's. (Source: Eximbank preliminary commitment letter for Build-Own-Transfer projects in Turkey, 1987; Bechtel Financing Services, Inc., "Private Power Development in Developing Countries", - paper prepared for Office of Energy, A.I.D., November 1987; Dillon, Duran-Downing, & Xafa, "Officially Supported Export Credits -Development and Prospects" IMF February 1988)

IV. PURPA LESSONS

The Public Utility Regulatory Policy Act (PURPA) provides for the sale of privately generated power to public utilities in the United States. It is the best known and most well developed legislation of its kind.

A. PURPA proves that independent power producers, if provided an adequate price for power, can rapidly and effectively construct facilities and produce power (in the United States). (Source: Cicchetti, 1988)

B. Experience by U.S. utilities under PURPA has resulted in movement toward institutionalizing two means of procuring power from Independent Power Producers:

- competitive bidding for small and medium size facilities that are relatively standard in size, design and system operation;
- merit order selection based on analysis of sponsor qualifications, price of power proposed, type of facility proposed, etc., which is generally best for large and/or more complicated projects. (Source: Cicchetti, 1988)
- Even with the PURPA encouragement, private power production in the Unites States was slower than expected in coming to fruition.

V. OTHER PRIVATE SECTOR POWER INITIATIVES

A. The government must recognize that there is a risk reward balance and that compensation must be based on risk assumption. Developing country governments seeking to achieve the benefits of private power must assume some level of risk. They must be willing to permit adequate compensation to private sponsors who are required to bear various project risks.

B. Participation of host country nationals as equity participants is essential to project development.

C. Due to high front end risk prior to and following obtaining letters of intent, project sponsors are in need of assistance in sharing development costs such as prefeasiblity and feasibility studies. (Source: A.I.D., Power Crisis Report to Congress, 1988)

D. For the substantial resources of export credit agencies to be available for private power projects, there must be a solution to the conflict between (1) their desire to have sovereign guarantees for their loans and loan guarantees and (2) the desire of host governments to limit contingent liabilities that appear on their national balance sheets. (Source: Ibid.)

E. Obtaining long term financing at reasonable rates is one of the most significant problems facing private power sponsors. (Source: Ibid.)

F. Lack of adequate coordination of the multiple U.S. agencies that can provide assistance to private power projects in developing countries and lack of coordination among the donor nations and multilateral development banks have been cited by potential project sponsors as a serious problem in obtaining the resources for projects. (Source: Ibid.)

G. Project sponsors, international finance agencies, and developing country governments have all noted that the lack of a single signed power purchase agrement, much less a constructed and operating private power plant as a model for other projects, has been a serious impediment to the promotion of private power. (Source: Ibid.)

ANNEX S

ANALYSIS OF POTENTIAL SUBPROJECTS

During the Project design efforts, S&T/EY expressed considerable interest in the financial and technical viability of potential subprojects. A total of forty projects were investigated and five were subjected to detailed cost analyses. The five included furnace oil, coal, gas, diesel and cogeneration technologies. The proprietary nature of the data used in the financial analysis precludes publishing details on individual projects. General information is presented in the following table:

PRIVATE SECTOR PROJECTS EVALUATED BY S&T/EY

Characteristics	Range	Average
1. Size of Project	4 - 600 MW	158 MW
2. Total Plant Cost	$4 - 455 million	$124 million
3. Equity Investment	25%	25%
4. Estimated Electricity Price	5.5 - 7.0 c/Kwh	6 c/Kwh
5. Internal Rate of Return	1.7 - 26.4 %	17.2 %

Actual project costs may vary from the costs presented in the table, which are illustrative. The comparison of different subprojects will result in price competition both within and across technologies and fuels. The GOP will select projects that:

1. Provide a greater use of indigenous resources,
2. Have lower electricity prices, and
3. Provide greater employment and income impacts on Pakistan's econony.

ANNEX T
DRAFT ENVIRONMENTAL ASSESSMENT GUIDELINES

1.0 INTRODUCTION

1.1. Background

The goal of the Private Sector Power Project (PSP) is to promote socio-economic development in Pakistan through increased electrical generation. The project is part of a multi-donor program that involves the United States Agency for International Development (USAID), World Bank, Asian Development Bank (ADB), the British Overseas Development Authority, the Japanese Overseas Economic Cooperation Fund and other donors. These environmental guidelines have been prepared to insure that the environmental requirements of these bi - and multi-lateral funding organizations, as well as those of the Government of Pakistan (GOP) are considered by private sector proposers.

1.2 Guideline Purpose and Scope

The purpose of the Environmental Guidelines is to provide the private sector proposer a framework for preparing an Environmental Assessment (EA) from which significant environmental impacts as well as alternative designs to mitigate such impacts, can be determined. The Environmental Guidelines are designed to discriminate in the level of detail required for the various types of plants and provide a format for proposing an environmental assessment document. Toward this end, proposers should focus on those areas where cost-effective environmental solutions are possible without affecting the feasibility of the project. From the evaluation of impacts, monitoring programs may be necessary to assess the project's impacts and to provide a mechanism for managing environmental effects as they occur.

1.3 Applicable Environmental Requirements and Regulations

With the promulgation of the Pakistan Environmental Ordinance of 1983 (No. XXXVII) GOP has initiated the mechanism for formulating national environmental policy and developing and enforcing national environmental quality standards. Policy and standards approval is the purview of the Pakistan Environmental Protection Council, whereas standards development and enforcement, as well as other environmental programs, are administered by the Environmental and Urban Affairs Division of the Ministry of Housing and Works. Currently, no environmental standards have been adopted by the GOP. However, draft standards have been proposed that would restrict the discharge of pollutants into the atmosphere and water. For major projects, the GOP has requested the completion of an Environmental Pro Forma. This Pro Forma is a comprehensive questionaire of all potential environmental impacts and provides the GOA an assessment of environmental impacts. Additionally, the GOP and provincial governments have established legislation governing antiquities, endangered species, national parks, wildlife santuaries, game reserves, forestry and water management.

PSP donors also have established environmental procedures and guidelines that must be considered by private sector proposers. These procedures and guidelines include those applicable to: (1) USAID Projects - 22CFR216, PD-6, Executive Order 12114, Section 118 of the Foreign Assistance Act of 1961 and Section 119 of the International Environmental Protection Act of 1983 and (2) World Bank projects - Environmental Guidelines (1984) and Occupational Safety and Health Guidelines (1980). These donor agency requirements have been included in the environmental guidelines.

1.4 Description of Potential Impacts

The construction of power plants will impact the air, water, ecological and social resources of Pakistan. The significance of such impacts will, largely depend on two factors: facility type and environmental assimilation. First, the discharges of pollutants and resource utilization depends on the type of facility constructed and its associated energy source, i.e. coal, oil and gas. For example, utilization of low-BTU, high sulfur coal, can produce significant atmospheric emissions and a concommitant effect on the environment. Conversely, use of natural gas (even at below grade quality), produces significantly less atmospheric emissions. Resource development and use by the facility also produces secondary effects which may translate to significant social, health and safety effects. Examples include coal mining health and safety considerations and the diversion of existing resources for power utilization, such as water taken from agricultural use for power plant use. The second factor (i.e. environmental assimilation) depends on how well the local environment can assimilate the pollutant discharges and accommodate social needs.

The candidate private sector power projects that may be funded include: cogeneration (15 MW size), gas turbine (100 MW size), diesel (20 MW size), oil-fired steam (150-1200 MW sizes) and domestic coal-fired steam (30-150 MW sizes). The potential impacts associated with such projects on air, water, ecological and social resources are presented below:

Air Resources: The major environmental considerations involving air resources include the total quality of atmospheric emissions and the resulting impacts on air quality. Currently, there are no emission limiting or air quality standards in Pakistan that would effect potential projects. However, the draft GOP emission standards which are listed in terms of the total quantity of pollutants emitted, could limit the size of a facility depending upon the final promulgated limit. The emission limiting criteria recommended in these Environmental Guidelines consider the World Bank requirements as well as the type of projects that will likely be developed. More importantly, ambient air quality criteria have also been developed for these Environmental Guidelines using recognized limits to protect human health and welfare. In determining conformance with ambient air quality criteria, the dispersive characteristics of the atmosphere must be taken into account.

Water Resources: The water resources affected by the private sector power projects may involve, the consumptive use of freshwater for cooling and service water requirements and discharges of contaminated waters. For steam electric plants located inland, consumptive uses of freshwater include both cooling and service requirements; plants located on the coast will require only service water. Cogeneration, diesel, gas turbine and combined cycle plants require fresh water in varying amounts depending upon their design. For private sector proposers, freshwater needs must be fully evaluated during the feasibility stage.

Although freshwater resources are available along the Indus valley in sufficient quantities to accommodate the needs of the proposed facilities, obtaining sufficient freshwater quantities in other areas may be difficult. For the latter, the use of dry cooling systems, once-through cooling systems using sea water and/or desalination must be considered in the facility design. In addition, to design considerations, freshwater use must be approved by the GOP and provincial government, as water allocation is granted by WAPDA and the provincial irrigation departments.

Potential water discharges likely for PSP projects may include: cooling system blowdown; boiler blowdown; demineralizer backwash and resin regenerator wastewater; ash transport wastewater and runoff from coal piles, ash piles, and the site; and other miscellaneous low-volume wastewater. The extent of impacts depends largely on the receiving body of water. Several of the larger potential wastewater streams are relatively clean, e.g. cooling system and boiler blowdown, and can be either discharged to a surface body with minimal effects or can be recycled. Other streams can economically be handled using evaporation ponds. In the case of oil fired facilities, potential spillage into surface water will necessitate consideration in the design for total containment.

Ecological Resources: The potential ecological impacts of private sector power projects include the removal of habitat by plant construction, air emissions effects; entrapment, impingement and entrainment of aquatic organisms in cooling systems; and effects of transportation systems. The significance of such impacts depends upon the specific plant design and the ecological systems affected. When evaluating the ecological impacts certain design features should be evaluated:

1. Site location and construction technologies,
2. Cooling system intake and discharge location,
3. Cooling system intake and discharge type, and
4. Thermal and chemical discharges.

Socio-economic Resource: The goal of the PSP Project is to promote socio-economic development in Pakistan through increased electricity generation. As a result of increased electric power, social development will benefit through increased industrial and agricultural activities. Socio-economic impacts will, however, occur from the PSP projects and potentially include: changes in land use, employment and economic patterns; increases in demands for facilities and services by project personnel; effects of subprojects on the health and safety of workers; increases in the use of transportation systems; and losses of cultural, historical and archaeological resources.

2.0 ENVIRONMENTAL CRITERIA

The applicable ENVIRONMENTAL CRITERIA for private sector projects is presented in Table 2-1. These criteria were developed from the environmental guidelines established by the World Bank and from technological considerations. The World Bank guidelines are considered appropriate since no environmental standards have been promulgated in Pakistan. These criteria should be incorporated in the facility design for private sector power subprojects and in the preparation of the Environmental Assessments.

The air emission criteria are listed for fossil fuel-fired steam electric, gas turbine and diesel engines. For the steam electric facilities the criteria can generally be achieved with good combustion practices and without pollution control equipment; the sulfur content of fuel oil would not be limited. Coal-fired facilities would likely be required to install either an electrostatic precipitator or a baghouse for particulate matter control, and low NOx burners. Also, the use of low-BTU high sulfur coal may also require SO_2 removal. The limits specified for gas turbines reflect the actual fuel type used and good operational practices. Diesel generators, which could burn either distillate or residual fuel oil, are only limited to good combustion practices through an opacity limitation.

Ambient air quality limitations reflect the needed protection of health and welfare of the general public. These limitations were based on World Bank standards and are consistent with the World Health Organization criteria.

The recommendations for stack height and velocity consider the potential for aerodynamic downwash which can produce ground level pollutant concentrations substantially higher than the ambient air quality limitations. By meeting these standards the potential for aerodynamic downwash is greatly reduced. In areas of complex terrain, i.e. areas where the terrain is greater than the stack height, the stack height may have to be higher than that recommended by this formula, to reduce impacts to these areas.

Wastewater discharge from power plants do not generally contain substantial quantities of toxic pollutants. As a result, most power plant wastewater can be economically treated with conventional treatment systems. The water discharge criteria, therefore, recognize the use of technologies such as neutralization (criteria 1), sedimentation (criteria 3), and oil-water separation (criteria 4).

Table 2-1 ENVIRONMENTAL CRITERIA FOR PRIVATE SECTOR POWER PRODUCERS

Environmental Category	Criteria
AIR EMISSIONS	1. FOSSIL FUEL FIRED STEAM ELECTRIC GENERATORS
	a. Sulfur Dioxide (SO_2: 454 MT/day/plant (500 tons/day/plant) at Annual Capacity Factor in rural areas; 91 MT/day/plant (100 tons/day/plant) at annual capacity factor in urban areas. Maximum concentration in stack gas should not exceed 5,000 mg/m^3.
	b. Particulate matter: 100 mg/m concentration in stack gas; 150/mg/m^3 can be accepted for rural areas. Visible emissions should not exceed 20% opacity on an average basis.
	c. Nitrogen Oxides (NO_x): 260 ng/Joule heat input (0.6 $lb/10^6$ BTU).
	2. GAS TURBINES
	a. SO_2: Maximum 0.8% sulfur in fuel oil.
	b. Particulate matter: visible emissions should not exceed 20% opacity on an average.
	c. NO_x: 200 ppm NO_x as nitrogen dioxide in stack gas.
	3. DIESEL ENGINES
	a. Particulate Matter: visible emissions from the engines should not exceed 20% opacity on an average basis.

Footnote
m: milli 10^{-3}
u: micro 10^{-6}
n: nano 10^{-9}

(Table 2-1 Continued)

AMBIENT AIR QUALITY	1. SO_2: 100 ug/m^3 annual average; 500 ug/m^3 maximum 24-hour average. 2. Particulate Matter: 100 ug/m^3 annual geometric mean; 500 ug/m^3 maximum 24-hour average. 3. NO_2: 100 ug/m^3 annual average
STACK HEIGHT	The minimum stack height should be based on the following calculation: SH 0.9 (H + 1/2 L) where: H = Building height (m) L = Lesser dimension of either the height or width (m) of the largest nearby building
STACK VELOCITY	Not less than 15 m/s.
WATER DISCHARGE	1. The pH of all discharges will be within the range 6-9. 2. There will be no discharge of polychlorinated biphenyl (PCB) compounds commonly used as transformer fluids. 3. Total suspended solids: 100 mg/l. 4. Oil and Grease: 20 mg/l. 5. Water used to transport bottom of fly ash will not be discharged. 6. Chlorine concentrations (Free available chlorine): 0.5 mg/l maximum and 0.2 mg/l average concentrations (NOTE: In certain situations where sensitive ecological species may be impacted; total residual or free residial chlorine should not exceed 0.05 mg/l.) Neither free available nor total residial chlorine will be discharged from any unit for more than 2 hours a day or more than one unit at a time. 7. Thermal: No more than 8°C above intake water; a 5° limit may be required in certain situations.

(Table 2-1 Continued)

8. Maintenance cleaning wastewater will not be discharged.

9. For hydro projects, water discharger should be coordinated with the local irrigation department.

WATER INTAKE STRUCTURE

1. Intake velocity should be no greater than 0.3 m/s.

2. As practicable, intakes should be located away from littoral (shore or beach) zone of the water body.

3. Intake should be located as to not affect fish breeding areas.

WATER DISCHARGE STRUCTURE

1. Multi-port diffusers should be used as practicable for dispersal of heated water from once-through cooling systems.

2. Location of discharges should consider the potential for dispersion offered by a particular water body.

LAND/SOLID WASTES

1. Where pollutant concentrations are appropriate, evaporation ponds should be used as much as practicable to avoid surface water discharge.

2. Ash disposal should occur within cells with topsoil covering a completed cell. Runoff should be diverted to an evaporation pond.

3. Land disposal of oily wastes (i.e. oil, solvents, transformer fluids etc.) should not be performed.

4. A sedimentation and erosion control plan must be developed.

(Table 2-1 Continued)

FUEL STORAGE	An embankment should be constructed around all fuel storage tanks and handling facilities. The embankment should be designed to retain the full/potential volume of the tank.
ECOLOGY	No significant impacts to endangered, rare and vulnerable species as listed by the Committee on International Trade of endangered species, the GOP (Zoological Survey Department and National Council for Conservation of Wildlife) and provincial government wildlife management boards.
NOISE	1. Workers: No greater than 90 decibels A-weighted (dBA) for an 8-hour shift; hearing protection can be used. 2. At property boundry: 70 dBA average. 3. In residential areas: 60 dBA daytime and 55 dBA night-time.
SOCIAL AND CULTURAL	1. Secondary growth effects to the general population shall be considered in the project development. 2. Impacts to tribal people shall be mitigated. 3. Compensation should be made to displaced people.
OCCUPATIONAL	A health and safety plan should be developed and based on the World Bank Occupational Health and Safety Guidelines for Power Plants; Coal and Fuel Oil.

Environmentally toxic materials such as PCB's (Criteria 2) must not be discharged into surface waters. Additionally, land disposal of these materials should not be performed unless special design features are utilized; i.e. in sealed drums and covered with an impervious material such as clay. Incineration of PCB's is preferrable. Either a special incinerator is required for their disposal or they may be burned in a conventional steam electric power plant. For incineration disposal methods, the temperature must be maintained at 1000°C for 1.5 seconds.

Any water used to transport bottom or fly ash may contain various quantities of metals (e.g. aluminium , sodium, potassium, and magnesium) and other inorganic contaminants (e.g. sulfates, chlorides, ammonia, and nitrates) depending upon the fuel supply. Potentially toxic metals such as mercury, arsenic, selenium, cadmium, copper, vanadium, and zinc could also be found in trace quantities in ash transport waters. For this reason this wastewater should not be discharged. Rather, recycling and disposal in evaporation ponds are recommended.

The chlorine discharge criteria is established based on potentially toxic effects to aquatic organisms. The thermal criteria is also based on potential impacts to aquatic systems.

Maintenance cleaning wastewater, resulting from such sources as the air preheater, boiler fireside and boiler tubes, should be neutralized and disposed of in evaporation ponds.

The water intake criteria is designed to reduce entrapment and impingement of fish on the intake screens, reduce bank or beach erosion and protect fish breeding grounds. The design velocity will generally protect fish of about 3 cm in size from entrapment in the intake flow and potential impingement on the intake screens. This criteria will only affect the actual area of the intake structure. Locating intakes offshore can generally have two benefits. First, erosion of the bank or beach due to littoral currents and direct impacts to the littoral zone would be eliminated. Conversely, an open channel intake must be maintained periodically due to sedimentation and the more prodictive littoral zone would be destroyed. Second, locating the intake offshore can protect breeding areas which are commonly found in the littoral zone. As a result, the potential for impacting the breeding areas of commercial and important act species will be greatly reduced.

Multiport diffusers which are long pipes with equally spaced orifices are recommended to disperse heated water from once-through cooling systems. Placement of the discharge structure should be in an area where dispersion of the discharge within the water body is greatest. Of particular importance is locating the once through cooling system discharge at a sufficient distance from the intake structure to insure minimal plume entrainment.

Land disposal of wastewaters is possible for most situations. However, in locating evaporation ponds, consideration must be given to potential contamination of groundwater and nearby wells.

It is recommended that ash be disposed of in cells with top soil covering the cell. Any runoff from an active cell should be diverted to an evaporation pond.

Oily wastes should be disposed of by land application. Developing a sedimentation and erosion control plan is important in controlling sediment transport to surface waters as well as liquid contaminants during periods of rain. As a general design criteria, the volume contained in a 10 year/24 hour storm should be held in specially constructed runoff ponds.

Fuel oil storage tanks should be constructed with primary containment, i.e., an embankment that circumscribes the tank. The volume between the tank and the embankment must be sufficient to hold the full volume of the tank as well as allowing for free board. Primary containment should also be constructed around fuel handling facilities.

Prior to constructing a plant at a site, the GOP Zoological Survey Department, National Council for Conservation of Wildlife and provincial governments wildlife management boards should be consulted concerning the potential for endangered, rare and vulnerable species occurrance at the site. If such species are likely to occur in the site area then a site-specific ecological survey should be performed. Any impacts to endangered, rare and vulnerable species should be avoided.

Noise limitations reflect protecting workers from hearing loss and reducing the potential for a facility becoming a nuisance to nearby villages or residential areas.

In performing the environmental assessment for the power plant, the potential for secondary development should be addressed. Where feasible, local officials should be consulted regarding such possibilities and measures initiated for obtaining the necessary and customary services for this secondary development. Impacts to tribal people, such as loss of land, must be mitigated.

A project specific health and safety plan should be developed for the project as part of the environmental assessment. This plan should be based on the World bank Occupational Health and Safety Guidelines for Power Plants; Coal Fuel Oil. In lieu of a project-specific plan the World Bank Guidelines can be directly substituted.

3.0 ENVIRONMENTAL ASSESSMENT

3.1. Overview and Requirements

The purpose of the Environmental Assessment is to provide the GOP and donor agencies decision makers with a full disclosure of the project's conformance with the environmental criteria and potential environmental impacts. An overview of the environmental assessment process consists of seven major steps.

1. Characterization of the Project,
2. Identification of Appropriate Environmental Criteria,
3. Identification of Assessment Requirements,
4. Baseline Environmental Characterization,
5. Impact Analysis,
6. Evaluation of Alternatives, and
7. Preparation of the Environmental Assessment (EA).

These steps make up an iterative process whereby environmental impacts are weighed against alternative designs to arrive at a project decision. This decision is based on conformance with environmental criteria and cost effectiveness of alternative pollution control measures. A discussion of these seven steps are contained in the following subsections. Section 3.2 contains the EA structure as well as the recommended EA outline.

3.1.1 Characterization of the Project

When a project is initially conceived, it is important to characterize the potential environmental resource use and discharges. This information provides the basis from which certain environmental criteria can be compared. Table 3-1 presents a listing of the initial information required.

3.1.2. Identification of Appropriate Environmental Criteria

When initial environmental characterization is completed, the environmental criteria (Refer to Table 2-1) is reviewed to determine applicability to the project. This step is needed since not all criteria would be applicable to every project. Table 3-2 presents a summary of environmental criteria and their general applicability to likely private sector power projects.

3.1.3 Identification of Assessment Requirements

The assessment requirements for each project will be different and therefore must be identified prior to initiating the EA. In this step there are two activities. First, the need for specific baseline environmental information and impact analyses is dictated by the size, type and location of the project. Such information and analyses are often time consuming and complex and must be determined in the early stages of project initiation. Table 3.3 presents a summary of requirements for projects. Once the requirements are reviewed they should be discussed with the GOP and potential donor organizations (i.e., USAID, World Bank, and ADB) to determine the precise requirements likely for the project. From these discussions a study plan should evolve that summarizes the scope of information and analyses that will be performed for the project.

Second, an environmental scoping process must be performed to assess the concerns of affected parties. The scoping process includes a one day meeting in the area where the project is located. Local area leadership (e.g., governmental officials, educators and elected officials) would be invited to attend. At the start of the meeting, the project developer would present a description of the project including land areas affected, employment, transportation (new and upgrades), air emission, water use and discharges. Potential environmental impacts of the project are described in general terms. Then, the local leadership is invited to provide comments on the project. Minutes of the scoping meeting are taken and used as a record of environmental concerns expressed at this time. During the EA preparation these concerns must be addressed. A typical format for a scoping meeting is presented below:

1. Seating of Guests
2. Recitation from the Holy Quran
3. Welcome Address
4. Introduction
5. Project Description
6. Environmental Requirements
7. Study Plan for Environmental Assessment
8. Questions and Comments from Invited Guests.

Another part of the scoping process is to obtain comments from governmental officials charged with allocating and protecting environmental resources. These agencies may include, but are not limited to:

1. Environmental and Urban Affairs Division of the Ministry of Housing and Works
2. Department of Archaeology, Ministry of Culture, Archaeology, Sports and Tourism
3. Water and Power Development Authority (WAPDA)
4. Provincial Irrigation Department
5. Zoological Survey Department
6. National Council for Conservation of Wildlife
7. Ministry of Forest, Wildlife and Forestry
8. Provincial Wildlife and Forest Department
9. Pakistan Meteorological Department
10. Marine Fisheries Department
11. National Institute of Oceanography
12. Population Census Organization, Statistics Division
13. Provincial Bureau of Statistics
14. Geological Survey of Pakistan

Based on the governmental agency contacts and the scoping meeting inputs, the study plan is finalized by the project sponsor.

3.1.4 Baseline Environmental Characterization

This step involves collecting, to an appropriate level of detail, the baseline information necessary to determine environmental impacts. For the most part, this guideline relies on the use of existing information on the meteorology, ecology, water resources and socio-economics of Pakistan. Much of this information is available from the agencies mentioned in paragraph 3.1.3 above. However, in some cases field efforts will be required.

3.1.5 Impact Analysis

In this step, the plant information is integrated with the baseline information to determine environmental impacts. The analysis techniqies often involve complex modeling of pollutant discharges and require input data that must be developed for the site. As a result, such techniqies often drive the need for baseline data gathering. However, in some cases, assumptions of baseline conditions may suffice as modeling inputs. It is important to note that these techniqies are useful in the actual plant design and can assist in redicing construction and operational costs, e.g. thermal plume entrainment. At this stage in the EA process, conformance with ambient air and water quality criteria is assessed, as well as potentially significant impacts to the ecological and social environment. In cases where impacts are significant, alternative designs must be considered.

3.1.6 Evaluation of Alternatives

If a potential environmental impact is significant, then alternatives must be considered. In most cases, alternatives may include designs, locations and operational practices. Such alternatives are evaluated one-by-one to determine if the significant environmental effect is mitigated. The alternative that is the most cost-effective, while meeting all the project objectives and mitigating the impact, can be selected as the preferred one for implementation.

3.1.7 Preparation of EA

Once the impact analyses and alternative evaluation is performed, the EA is prepared. This document discloses the baseline and impact information on the project and proposes mitigation and monitoring programs for the project. It is submitted in draft form to the GOP and donor agencies for review.

3.2. Structure and Requirements of EA

The structure and requirements of the EA is contained in Table 3-4. This table is an annotated outline for EA preparation. When initiating the EA process it is important to contact a representative of GOP and/or donor organizations in determining the level of detail for the project. The sub-sections that follow present a brief introduction into the techniques and analysis that should be performed. It is beyond the scope of this guideline to provide a detailed discussion of techniques.

3.2.1 Project Description

This portion of the EA must present an overview of the project and explain how the project is compatible with the Private Sector Power Project's objective. In addition, the applicable criteria for the project is presented in this section (Refer to Table 2-1). The scoping process should also be summarized and a list of governmental agency contacts presented.

3.2.2 Description of Project

In this chapter, the technical details of the project are presented along with environmental parameters and systems. The level of detail of the engineering information incorporated in this chapter would be consistent with that contained in feasibility or preliminary engineering studies normally performed at this stage in the project schedule. This information can be submitted in tabular format such as Table 3-1 or in a clear narrative form. Where possible engineering drawings and flow charts should be provided.

3.2.3 Description of Affected Environment

This chapter presents the baseline information developed for the project. The level of detail concerning the analyses that may be required is presented in the following paragraphs.

Climatology - Climatological information is available from the Pakistan Meteorological Department for many cities located throughout Pakistan. The data consists of 30 year averages, as well as extremes, for wind speed and direction, temperature, rainfall and humidity. These data can be summarized in tabular format for the meteorological station nearest the proposed site.

Meteorological - The information is used to describe the local meteorology of a site and would also be used to perform dispersion modeling. Long term records of meteorological data consisting of 3-hour values are also available from the Pakistan Meteorological Department (PMD). These data consist of wind speed (knots, at a 3 knot threshold), wind direction (reported in the 16 cardinal wind directions), temperature, humidity, cloud cover and weather. At least one PMD meteorological station, i.e. Karachi, records data at 1/2 hour intervals with wind directions given within 10°. For large facilities (e.g., greater than 300 Mw), on-site meteorological data may have to be collected.

Existing Air Pollution Sources - Information on existing air pollution sources can only be obtained through a field survey and, where possible from interviews with management of the source facilities. Actual emissions would have to be estimated using compilation of Air Pollutant Emission Factors, U.S. Environmental Protection Agency, 1987 AP-42 or equivalent pollutant estimating techniqies. Stack parameters (i.e., height, diameter, temperature and velocity) can generally be obtained from the source management. Fugitive emissions, i.e., pollution not coming from a stack, should be noted in this section. Estimates of other emissions would be beyond the scope of an EA at this time.

Ambient Air Quality - Collecting ambient air quality information can be both time consuming and expensive. Various techniqies are available. For rural projects, baseline concentrations of SO_2, NO_x and CO will be extremely low; therefore substantive monitoring would not be necessary. For projects located near urban - industrial areas, monitoring may be necessary. The potential for monitoring can be assessed by the following matrix:

	Project Location	
Type Monitoring Required	Rural	Urban/Industrial
None to Grab Sample	Yes	No
Non-Continuous/Continuous	No	Potentially

Grab samples can be made using colorimetric detector tubes. This equipment is hand held and can be easily transported to various locations. Observed concentration using this equipment is limited to a detection limit that is usually much higher than the non-continuous or continuous methods. However, this detection limit is usually below the environmental criteria.

Non-continuous and continuous monitoring must be operated over a period of time to obtain valid information, e.g., a calendar quarter. This type of monitoring is normally required for large projects greater than 300 MW located in urban/industrial areas.

Surface Water Resource - The information in this sub - section would consist of both water quantity and quality. Water quantity information, i.e., flow data, is available from WAPDA and local irrigation departments. Water quality information may be available from local sources. Such information is usually available from the Public Health Engineering Research Laboratory or university sources. In the event data is not available, grab samples at various locations in the surface water body will be required. Water quality information should encompass both the wet season and dry season.

Geology, Physiography, Topography and Seismicity - This information is generally available from the Geological Survey of Pakistan.

Ground water Resources - Information on ground water resources for a particular area must generally be obtained from a field survey. During such a field survey, the local wells within 1 km would be noted. Where possible, a grab sample of the water, should be taken for later laboratory analysis. For a coal fired plant, more information will be required if there are substantial local uses for ground water. In these cases, mitigative measures may be required for the ash disposal areas.

Ecology - A substantial amount of information is available on the ecology of Pakistan from the Geological Survey Department, Marine Fisheries Department and other sources such as universities. Contacts with such information sources should be made early in the project. Information required for terrestrial ecology description should be made by an experienced ecologist during a walkover survey. For aquatic ecology baseline information, actual field studies may be required for large water uses and discharges.

Social, Cultural and Institutional Environment - This infomation is available from the GOP, provincial and district governmental offices. Statistical information should be summarized at the Taluka/Tehsil level where available. A site survey should be performed to determine land use and gather data not available from the literature. This may include information on local police, schools, transportation, health care and other facilities in the area. Archaeological resources can be identified through the Department of Archaeology.

3.2.4 Environmental Impacts of the Proposed Project

In this chapter, the impacts of the project on air, water, ecological and social resources are identified. Additionally, this chapter should contain assessments related to occupational safety and health and industrial hazards. The following paragraphs present an overview of the impact analyses that are required.

Air Quality Impact Analyses - Air quality impact analyses require the use of an atmosphere dispersion model and local meteorological data. Models for this purpose are available from the US Environmental Protection Agency's (EPA) Users Network for Applied Modeling of Air Pollution (UNAMAP), 1986. This compilation of models includes both screening and refined models that are applicable for simple and complex terrain situations. Complex terrain being these land areas of an elevation above the height of the stack. EPA's Guideline on Air Quality Models (1986) provides information on the use of these models. A primary data need for input to the dispersion models is meteorological data summarized in an hourly format. In Pakistan, this data is available for Karachi and Hyderabad. The Karachi data is collected as 1/2 hourly data for aircraft control purposes. It is unknown if 1/2 hourly data is available for other locations in Pakistan. If meteorological data is not available in hourly format, then 3-hourly data can be used. For a greater discussion on the use of this data the reader is referred to the Environmental and Social Soundness Assessment for the Lakhra Coal Mine and Power Generation Project, March 1987.

Noise Impact Analysis - With information on the potential noise sources of a plant, impacts can be estimated by considering the attenuation due to hemispherical spreading, atmospheric molecular absorption and surface features. The US Edison Electric Institute has published an Environmental Noise Guide (1977) that provides the techniques for estimating impacts. The focus of the impacts should be on sensitive receptors such as residential areas, villages, hospitals and schools.

Water Resources Impact Analysis - Impact analyses related to water resources involve three general areas: surface water quantity, surface water quality and ground water impacts. The water quantity analysis is based on the facility consumption relative to the 10-year low flow condition. Additionally, the project must receive a water allocation authorization for freshwater resources from WAPDA and the appropriate local irrigation department. The impacts to surface water resources depends upon the magnitude of discharge. Various modeling techniques are available depending upon the particular situation. Guidance can be obtained from US EPA's Environmental Impact Assessment Guideline for New source Fossil Fueled Steam Electric Generating Stations, July 1979. Data needed for the available models include bathemetry and flow data. Water quality information on the surface water body is important in comparing predicted results to actual conditions.

Ecological Impact Analyses - The ecological impact analyses focus on the loss of habitat due to plant construction and the effects on terrestrial and aquatic systems from intakes and discharges. The latter relies heavily on the use of the air quality and water resource impact analyses in determining effects to those system. In both cases, the significance of impacts is based on the quality of habitat and the presence of endangered, rare, vulnerable and commercially important species.

Social and Cultural Environmental Impacts - This section must contain an evaluation of impacts on land use, demography and cultural resources, as well as an analysis of primary and secondary infrastructure requirements, worker occupation safety and health and industrial hazards. The evaluation of impacts of the project on land use and demography is based on information obtained from the local area. Such information is available from the previously mentioned sources and by an on-site survey. All primary and secondary infrastructure elements required to support the construction and operation of the power plant should be identified and analyzed. This must include an assessment of the reliability under Pakistani conditions. Training requirements resulting from the construction and operation of the project shall be identified. The analysis should include a description of environmental impacts which would result if the infrastructure is not constructed in a timely fashion or not properly operated and maintained. Impacts to be evaluated should include: land prices; additional spin-off employment, short and long term; pressures on existing health, educational, and social facilities; infrastructure, and likely sources of its provision; and security requirements (police/military), if any.

A plan should be proposed for the timely implementation of any infrastructure to avoid negative environmental impacts, negative socioeconomic impacts and project delays. The plan should include the capital and recurrent costs (both foreign exchange and local currency) for the construction, operation, and maintenance of the required primary and secondary infrastructures. The plan should also include an analysis of the institutions and sources of revenue which will be responsible for financing the infrastructure and the associated costs. An assessment of the labor requirements of the expanded plant should be included. Interviews with government officials, local political and social leaders, and people living within a 10 km radius of the power plant site are helpful. Recommendations on the preferred social strategy that will maximize benefits to plant workers and surrounding areas, prevent inappropriate authorized or unauthorized settlement in the vicinity of the complex, and minimize the likelihood of occurrence of social problems and hardships should be developed.

The analysis of occupational health and safety impacts of the power plant as well as for fuel transport systems associated with the project and recommended mitigative measures as necessary should be developed. The EA will analyze the potential for industrial/environmental emergencies or accidents at the complex and will identify recommended mitigative measures as necessary. The mitigative measures would include an Emergency Prevention, Planning, and Management Plan.

3.2.5 Alternative Evaluation and Mitigation and Monitoring Programs

In the alternative evaluation, the feasible design alternatives necessary to mitigate a significant environmental impact are evaluated. These alternatives are evaluated based on their economic, environmental and engineering features. Alternatives may include but are not limited to the following:

- Site location alternatives
- Engineering and pollution control equipment alternatives
- Management control alternatives
- Location alternatives for intakes and discharges
- Social alternatives

Such alternatives are evaluated on the same basis as the original design. Those alternatives that provide cost effective environmental control are preferred. The mitigation plan summarizes the measures to be taken to either monitor and/or ameliorate a known or potential environmental effect. Mitigation and monitoring plans are specific to a project. At a minimum, this section should address secondary infrastructure, local employment and training requirements, monitoring programs, occupational safety and health, and emergency prevention and planning.

3.3 EA Schedule

Preparation of the EA is an integral part of a private sector power project. A proposer must incorporate appropriate environmental control features into the facility which must be accounted for in the project cost estimate. For this reason, the proposer must review these Environmental Guidelines prior to preparing pricing information and consult with GOP and donor organizations on these requirements during the Letter of Intent stage. The actual EA should be completed during the Feasibility study and must be submitted prior to contract negotiations.

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TABLE 3-1 ENVIRONMENTAL CHARACTERIZATION OF PROJECT

Complete information for each separate source or combine as appropriate, but indicate how combined).

a. Heat Rate (Kcal/kwh): Condition:
b. Capacity Factor:
c. Heat Input (Kcal/hr; cubic m/hr): Condition:
d. Fuel Usage (Kg/hr; cubic m/hr): Condition:
e. Fuel Characteristics:

1. Heating value (Kcal/kg; Kcal/cubic meter):
2. Specific Gravity:
3. Ash (%):
4. Sulfur (%):
5. Moisture (%):
6. Nitrogen (%):

f. Air Emissions (Maximum in Kg/hr).

1. Particulate Matter:
2. Sulfur Dioxide:
3. Nitrogen Oxides:
4. Carbon Monoxide:

g. Stack Parameters (at maximum load)

1. Height (m):
2. Diameter (m; if rectangle give area in sq m):
3. Temperature (degree C):
4. Velocity (m/s):

h. Water Intakes (Provide average annual and maximum; cubic m/min).

1. Cooling: Ave Max Source:
2. Service: Ave Max Source:
3. Potable, including colony: Ave Max Source:

i. Water Discharge (average annual and maximum, cubic m/min).

1. Cooling System: Ave' Max
2. Low-Volume Wastes: Ave Max
(Low-volume wastes include boiler blowdown, filter backwash, etc)
3. Sanitary Wastewater: Ave Max
4. Site Runoff: Ave Max (24-hrs)
5. Ash Sluice Water: Ave Max

j. Water Balance (Flow diagram of water flows)

k. Solid Waste (average)

1. Water treatment sludge (kg/yr):
2. Sanitary sludge (kg/yr):
3. Bottom Ash (kg/yr):
4. Fly Ash (kg/yr):

l. Provide Plot Plan

m. Employment/Infrastructure

1. Construction Workers: Ave Max
2. Construction Payroll (Rs):
3. Operation Workers: Families
   (Separate by managerial, professional, skilled and unskilled classes).
4. Operational Payroll:
5. Housing Units and Class:
6. Provide a description of other primary infrastructure needs developed by the project including but not limited to: Education, Health Care, Police, Fire and Utilities.
7. Provide a description of communication facilities.
8. Provide a description of transportation facilities including roads and worker transport.

TABLE 3-2 APPLICABILITY OF ENVIRONMENTAL CRITERIA

Environmental Criteria	Applicable Projects
AIR EMISSIONS	All plants that have combustion processes
AMBIENT AIR QUALITY	" " " "
STACK HEIGHT	" " " "
STACK VELOCITY	" " " "
WATER DISCHARGES/ STRUCTURE	Plants that discharge to surface waters
WATER INTAKE/ STRUCTURE	Plants that require water make up
LAND/SOLID WASTES	All Plants
FUEL STORAGE	Coal and fuel oil fired facilities (even if used as back up fuel)
ECOLOGY	All Plants
NOISE	All Plants
SOCIAL AND CULTURAL	All Plants
OCCUPATIONAL	All Plants

Note: Include all fuel burning facilities such as diesel, gas turbines and steam generators.

TABLE 3-3 SUMMARY OF EA PROJECT REQUIREMENTS

EA Components	Requirements (complete EA Section)
I. PROJECT CHARACTERIZATION	All Projects
II. BASELINE CHARACTERIZATION	
A. Air Resources	
1. Climatology	All Projects
2. Meteorology	Projects emitting greater than 500 Mt/year
3. Existing Sources	All Projects emitting air pollutants
4. Ambient Air Quality	Projects emitting greater than 500 Mt/year
B. Water Resources	
1. Quality	All projects with surface water discharges
2. Quantity	Projects with a water use greater than 3,500 m^3/day
C. Ecology	
1. Terrestrial	All Projects
2. Aquatic	Projects with either a surface discharge or water use greater than 3,500 m^3/day
3. Endangered Species	All Projects
D. Social	All Projects
III. IMPACT ANALYSIS	
A. Air Quality Modeling	Projects emitting greater than 500 Mt/year
B. Noise	All projects
C. Water Quality Modeling	Projects with a discharge greater than 3,500 m^3/day
D. Ecology	All projects
E. Social	All projects
IV. MITIGATION/MONITORING	
A. Secondary Infrastructure	All projects employing 100 people or more
B. Training/Employment	" " "
C. Monitoring	Evaluated on a case by case basis
D. Safety Plan	All projects
E. Emergency Planning	All projects

Table 3-4. ENVIRONMENTAL ASSESSMENT (EA) OUTLINE

1.0 PROJECT BACKGROUND AND PURPOSE

1.1 PROJECT BACKGROUND

(Provide a brief discussion of the project.)

1.2 OBJECTIVES OF THE PROJECT
(Describe the purpose of project)
1.2.1 Power Development Program
(Provide a discussion of the project's role in private sector as envisioned by WAPDA.)

1.2.2 Compatibility with the Private Sector Project Objectives

(Provide a brief description of the purpose of the Project.)

1.3 OVERVIEW OF PROPOSED PROJECT AND STUDY AREA
(Provide a brief discussion of project and location)

1.4 ENVIRONMENTAL POLICY, REGULATIONS, PERMITS AND CRITERIA APPLICABLE TO THE PROJECT
(Provide a listing of the GOP and Donor requirements. Refer to environmental criteria and provide a listing of Federal, Provincial and District permits applicable to the project.)
1.4.1 Government of Pakistan requirements
1.4.2 Donor Organization requirements

1.5 ENVIRONMENTAL ASSESSMENT SCOPING AND GOVERNMENTAL AGENCY CONTACTS
(Provide a summary of scoping session and a list of contacts.)

2.0 DESCRIPTION OF PROJECT ALTERNATIVES
2.1 SITE DEVELOPMENT
(Provide a site plan (1:1000 scale) showing plant facilities in relation to the surrounding area.)

2.2 SYSTEM DESCRIPTION
(Provide a flow diagram of the project showing flows of fuel, air, combustion products, water, wastewaters, solid wastes, steam, and electricity. Show volumes and/or quantities.)

2.3 FUELS
(Include proximate and ultimate analysis, if appropriate. Provide fuel usage data.)

2.4 ENVIRONMENTAL PARAMETERS AND SYSTEMS

2.4.1 Environmental Parameters
(Complete the listing of environmental parameters presented in Table 3-1. In the following sub-sections provide a brief discussion of the environmental input, treatment and control systems.)

2.4.2 Air Emissions

2.4.3 Water Supply and Treatment

2.4.4 Wastewater Discharges

2.4.5 Solid Wastes

2.6 INFRASTRUCTURE DEVELOPMENT
(Provide information on the infrastructure development for the project including but not limited to: housing, health-care, education, police protection, communications, transportation and utilities.)

2.7 EMPLOYMENT
(Provide statistics on employment during construction and operation of the plant, specify employment by employee category, i.e., expatriate, professional, skilled and unskilled; provide employment figures in man-year for each of construction and operation.)

3.0 DESCRIPTION OF AFFECTED ENVIRONMENT

3.1 PHYSICAL ENVIRONMENT

3.1.1. Air Resources

3.1.1.1 Climatology
(Provide 30 year average Climatological data for wind speed, wind direction, temperature, rainfall and humidity obtained from the nearest Pakistan Meteorological Department Weather Station.)

3.1.1.2 Site Meteorology
(Provide site meteorology that describe the dispersion characteristics of the atmosphere. This includes frequency distribution of wind speed and duration by stability class.)

3.1.1.3 Existing Air Pollution Sources
(Provide a list of all air pollution sources within 10 km^2 that emit more than 100 Mt/year of particulate matter, SO_2 or NO_x.)

3.1.1.4 Ambient Air Quality
(Provide baseline air quality estimated through the use of air dispersion models or monitoring equipment.)

3.1.2 Land and Water Resources

3.1.2.1 Surface Water Resources
(Provide a discussion of existing withdrawls and discharges, include flow statistics and water quality information.)

3.1.2.2 Geology, Physiography, Topography, and Seismicity
(Provide a brief description of site geology including information from soil borings if available. Include a topological map.)

3.1.2.3 Ground Water Resources
(Provide information on ground water supplies within 1 km of the site including quantities and quality. Focus should be placed on potable uses.)

3.2 ECOLOGICAL ENVIRONMENT
(The focus of these sections will be on the plant property and on associated water bodies.)

3.2.1 Existing Communities

3.2.1.1 Plant Site
(Provide a list of species found on the plant site and those species that would likely use the habitat at the site.)

3.2.1.2 Water Body
(Provide a listing of aquatic species including plankton, fish, invertebrates and larival forms that may be impacted by the plant through impingement, entrainment and discharge.)

3.2.2. Endangered Species
(Provide a listing of Endangered, Rare and Vulnerable species in the plant vicinity. If such species may occur, site-specific surveys may be required.)

3.3 SOCIAL, CULTURAL, AND INSTITUTIONAL ENVIRONMENT

3.3.1 Land Use
(Provide a map of the plant vicinity showing land uses within 1 km of the plant.)

3.3.2 Socioeconomics
(In the following subsections provide information from the smallest political jurisdiction where the project is located, e.g., Taluka/Tehsil; statistics are available from the Federal or Provincial government.)

3.3.2.1 Demography
3.3.2.2 Employment and Economy
3.3.2.3 Transportation
3.3.2.4 Facilities and Services (police/schools/health care/fire/utilities)

3.3.3 Cultural Resources
(Provide a discussion of lifestyle, cultural patterns and attitudes; historical and archaeological resources within 1 km of the plant.)

4.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

(In this section the proposer would present construction and operation impacts of the power plant to the physical, ecological and social environment.)

4.1 PHYSICAL ENVIRONMENT

4.1.1. Air Quality
(Provides an impact analysis using appropriate dispersion models with at least 1 year of meteorological data to estimate plant impacts. The primary pollutants to be modeled include TSP, SO_2, and NO_2. Isopleths of maximum impacts should be provided. This information would be used

to assess impacts to human health and welfare, agriculture, soils, and other important or sensitive receptors in the area. Model predictions should include 1-hour, 3-hour, 8-hour, 24-hour, seasonal and annual impacts. All potential fuel alternatives should be addressed. Transboundary air impacts should be addressed.)

4.1.2 Noise
(Provide estimates of noise impacts to sensitive receptors, i.e., residential areas, villages, hospitals, and schools.)

4.1.3 Water Resources
(Riverine Systems: Provide water withdrawl impacts based on percentage of water use relative to the 10-year low flow condition. A regional flow balance should be developed to assess impacts to agriculture and portable uses. Thermal and chemical discharge should be modeled using a two dimensional river model. Open Water Systems: Provide information on the impacts of the thermal and chemical discharges using an appropriate model. Runoff from plant systems must also be addressed for both systems.)

4.1.4 Land Resources
(Provide a discussion of effects to soils at the plant site.)

4.2 ECOLOGICAL ENVIRONMENT
(This section should use information from previous sections on level of impacts.)

4.2.1. Vegetation Removal and Loss of Wildlife Habitat
(Provide information on the ecological habitat that will be directly impacted by the plant construction. Refer to information in section 3.2.1.1.)

4.2.2. Air Quality Impact
(Using the air quality projections performed for Section 4.1.1., provide estimates of air emissions effects on wildlife, vegetation and agriculture.)

4.2.2.1 Wildlife
4.2.2.2 Vegetation
4.2.2.3 Agriculture

4.2.2.3 Aquatic Impacts
(Based on the biological information supplied in 3.2.1.2, provide estimates of aquatic impacts.)

4.2.3.1 Impingement and Entrainment
4.2.3.2 Thermal and Chemical

4.3 SOCIAL AND CULTURAL ENVIRONMENT/DEMANDS ON PRIMARY AND SECONDARY INFRASTRUCTURE

4.3.1 Land Use Impacts
(Provide information on changes in land use resulting from constructing and operating the project. Refer to discussion and land use map presented in Section 3.3.1.)

4.3.2 Demographic Impacts
(Provide an assessment of any changes in population, employment and economic patterns due to the project. Include benefits as well.)

4.3.2.1 Population Patterns
4.3.2.2 Employment Patterns
4.3.2.3 Economic Patterns

4.3.3 Primary Infrastructure
(Present an evaluation of all primary infrastructure requirements including housing, health care, utilities, schools, transportation, police, and communication required by the project.)

4.3.3.1 Requirements

4.3.3.2 Costs and Sources of Revenue
(Including foreign exchange/local currency)

4.3.3.3 Schedule and Effects of Delays
4.3.3.4 Training

4.3.4 Secondary Infrastructure
(Evaluate all secondary infrastructure requirements including housing, health care, utilities, schools, transportation, police and communication.)

4.3.4.1 Increased Demand for Facilities and Services
4.3.4.2 Induced Development
4.3.4.3 Development Strategy and Requirements
4.3.4.4 Costs and Sources of Revenue
(including foreign exchange and local currency)
4.3.4.5 Schedules and Effects of Delays

4.3.5 Cultural Resources
(Using the information contained in Section 3.3.3, provide a discussion of potential impacts to cultural resources within 1 km of the plant.)

4.3.5.1 Cultural Patterns and Values
4.3.5.2 Historical and Archaeological Resources

4.3.6 Occupational Health and Safety
(Evaluate the project based on the World Bank Occupational Health and Safety Guidelines, June 1984)

4.3.6.1 Occupational and Safety Hazards and Potentials

4.3.6.2 Requirements
4.3.6.3 Costs and Sources of Revenue
4.3.6.4 Training

4.3.7 Industrial Hazards Assessment
(Utilize the World Bank Manual of Industrial Assessment to evaluate areas of potential catastrophic proportions to the physical, ecological or social environment)

5.0 ALTERNATIVE EVALUATION/ENVIRONMENTAL MITIGATION PLAN AND MONITORING PROGRAMS
(In this section evaluate feasible alternatives that would mitigate a significant impact. An analysis should be provided that includes organizational responsibility, infrastructure and training requirements. Capital and recurring costs for monitoring programs should be identified.)

5.1 SECONDARY INFRASTRUCTURE DEVELOPMENT
5.1.1 Health Care
5.1.2 Education
5.1.3 Police
5.1.4 Utilities
(electric, water, sewer, and communications)
5.1.5 Other

5.2 LOCAL TRAINING AND EMPLOYMENT REQUIREMENTS

5.3 MONITORING PROGRAMS
5.3.1 Air
5.3.2 Water
5.3.3 Social

5.4 OCCUPATIONAL SAFETY AND HEALTH

5.5 EMERGENCY PREVENTION AND PLANNING
(This section will present a framework for an action plan to respond to emergencies likely to occur at the plant.)

7.0 REFERENCES
Attachments: (Provide attachments as necessary to support the assessment. Include copies of applicable permits and approvals.)

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LIST OF EXPRESSIONS OF INTEREST IN POWER GENERATION

NAME OF PROJECT	FUEL	LOCATION	SIZE	SPONSOR
Darwaza	Oil	Quetta	70 MW	Siemens/Foster Wheeler/Baluchistan Dev. Authority
Karachi Steam Power	Oil	Karachi	1200 MW	Urban Electric Corporation
Urban Electric	Oil	Port Area		Babcock and Wilcox
Habibullah/Siemens (Quetta)	Coal	Quetta	30 MW	Habibullah Mines/Siemens
Habibullah/Siemens (Lakhra)	Coal	Lakhra	100 MW	Habibullah Mines/Siemens
Salt Range Coal	Coal	Jhelum	60 MW	Saif Int'l Combine Ltd Coal Mining Co
Lakhra/Urban Elect.	Coal	Lakhra	75 MW	Urban Electric & Partners
Lakhra/Pakland	Coal	Lakhra	120 MW	Pakland/Bechtel/Pyro Power
BRB Link Canal	Hydro	Near Lahore	12 MW	Army Welfare Trust
Deg Fall	Hydro	Near Lahore	3.83 MW	Min. Irrigation & Power Punjab
Upper Gojera Canal	Hydro	Sheikhupura	1.90 MW	Min. Irrigation & Power Punjab
Upper Chenab Canal (Bambanwala)	Hydro	Gujranwala	4.24 MW	Min. Irrigation & Power Punjab
Upper Pakpattan Canal	Hydro	Sulemanki Barrage	2.40 MW	Min. Irrigation & Power Punjab
Lower Bari Doab Canal	Hydro	Sahiwal	1.99 MW	Min. Irrigation & Power Punjab
Lower Bari Doab Canal	Hydro	Sahiwal	3.77 MW	Min. Irrigation & Power Punjab

LIST OF EXPRESSIONS OF INTEREST IN POWER GENERATION

NAME OF PROJECT	FUEL	LOCATION	SIZE	SPONSOR
Main Line Lower	Hydro	Sheikhupura	5.04 MW	Min. Irrigation & Power Punjab
B.S. Link Tail	Hydro	Sulemanki	6.0 MW	Federal & Provincial Govt
Rohri Combined	Hydro	Rohri (Sind)	12 MW	Federal/Sind Govt
B.S. Link	Hydro	Renala	9 MW	Federal/Punjab Govt
Jinnah Barrage	Hydro	Jinnah Barrage	120 MW	Urban Elec./Canadian Co
Sari/Hundi	Gas	Sari Hundi Dadu	Not known	Oil & Gas Dev. Corp
Adhi	Gas	Adhi	25 MW	Pakistan Petroleum Limited
Nandpur/Panjir	Gas	Chuprata (Multan)	33 MW	WAPDA/Private Sector
Leghari	Gas	Leghari (Badin)	Not Known	Union Texas
Ucch	Gas	Ucch (Baluchistan)	250 MW	Oil & Gas Dev. Corp
Khairpur	Gas	Khairpur (Sind)	Not known	Pakistan Petroleum Ltd
Khandkot	Gas	Khandkot (Sind)	Not known	Pakistan Petroleum Ltd
Dabhi	Gas	Dabhi	Not known	Not known
Cogeneration/Sui Northern Gas	Gas	Lahore	1.6 MW	Saturn gas turbines SOLAR/ Sui Northern Gas Pipelines
Finance & Trade Center Generation	Gas/Oil	Karachi	2.8 MW	AEG/Germany-Consortium of owners
Pakland Paper Ltd. Cogeneration	Oil	Not Known	13 MW	Pakland Group

E&E:JRM:aa

PRIVATE SECTOR POWER PROJECT

ANNEX V

ANALYSES TO SUPPORT POLICY DIALOGUE

During the implementation of the Project policy dialogue, technology transfer, and institution building activities will require a considerable amount of supporting information. To answer this need, a number of studies are planned. Possible study topics include:

1. Analysis of the magnitude and costs of loadshedding at the national level.

2. Analysis of the costs and agricultural production effects of the subsidy which WAPDA provides to the agricultural sector with the current flat rate tariff for tubewells.

3. Assessment of BTU requirements to pump one foot hectare of irrigation water with diesel and electric tubewells considering the energy efficiency of diesel and electric tubewells and the magnitude of distribution losses in the national grid.

4. Analysis of the process for extablishment of environmental regulations for energy related facilities.

5. Benefits of decentralizing the power utility functions into generation and transmission, urban distribution and rural distribution.

6. An institutional assessment of the capability of power organizaitons and institutions in South Asia to identify the potential for regional technology exchange and training opportunities.

7. A feasibility study on issuing private sector utility bonds to finance specific private sector power projects.

8. An institutional assessment of private financial entities operating in Pakistan to evaluate their potential for serving as an Intemediate Credit Institution for the Private Sector Window.

9. A comparative study of electric utility financing practices in the US, Europe, LDCs and Pakistan.

10. A survey of world-wide electricity tariff structures to determine the extent to which LRMC is actually used to determine electricity tariffs.

11. An analysis of alternative quantities of natural gas which should be allocated to fertilizer and power generation use during the next 20 years.

12. A simulation study to analyze the impact of different electricity tariff structures on farm income, production, irrigation intensity and amounts of electricity used by electric tubewells.

13. Standard contracts for small subproject sponsors on an "avoided cost" or other appropriate basis to simplify and reduce the cost of the proposal submission/approval process.

14. Feasibility studies for independent rural utilities (generation plus distribution)

15. Specific pre-feasibility analyses of potential subprojects to develop data for the preparation of opportunity notices for private power producers.

16. Feasibility studies for generation and distribution of power in industrial estates.

17. Private contract operation of selected WAPDA generation facilities or distribution feeders/substations.

18. Analyses of alternative purchase pricing options such as the avoided cost concept, bid established prices and cost-based pricing.

19. Options of increasing private sector debt financing by floating public bonds and other financial mechanisms.

At least seven such special studies will be undetaken during the first five years of the project. USAID project officer will approve request for Special Studies funds on a case by case basis.

ANNEX - W

TERMS AND CONDITIONS OF AID AND DONOR FINANCING

Estimated Sources and Amounts of Funds

USAID	125 million
World Bank	150 million
Japan (OECF)	150 million
Great Britain (ODA)	20 million
Asian Development Bank (ADB)	100 million
Germany	30 million
Italy	50 million
TOTAL	625 million

Borrower Grantee: Government of Pakistan, for onlending through ICIs to sub-borrowing private entities incorporated under the laws of Pakistan undertaking approved power generation projects.

Amounts: The Fund will loan up to 3 percent of the total subproject cost. Private sector equity will be at least 25-percent.

Currencies: Fund will be available mainly for foreign currency costs, but associated local currency costs (limited to 30-percent of the loan) may be covered. Repayment currency: Rupees. The GOP retains a spread to cover foreign exchange fluctuations.

Maturities: Max: 23 years, including a grace period of up to 8 years.

Interest Rate to GOP: Varying rates to GOP according to individual donor agreements resulting in a blended rate estimated at 8 percent per annum (pa).

Interest Rate to Intermediate Financial Institution:

8.5 percent pa, which results from:

- 8 percent pa, to donors, inclusive of foreign exchange risk
- 0.5 percent pa, for Fund administratoin costs

Sub-Loan Approvals: The NDFC will have authority to approve loans.

Sub-Loan Approval Authority: Majority of the NDFC Board. The Chairman of the NDFC will have signing authority.

Project Analysis: The sponsor will provide the NDFC with a detailed project analysis. The PED will manage the loan review process.

GOP Repayment Risk: GOP will repay loans to donors at agreed interest rates except for grant funds.

Reflow of sub-borrower's loan principal repayments: All principal and interest payments when made by the borrowing private companies will be passed through to the GOP. GOP and USAID will agree to channel reflows into the private power sector of Pakistan.

Funds flow: Donors provide funds in accordance with usual donor agreements with the GOP.

Front end Fees: Fees charged by lending bank to the borrower upon initial loan drawdown amounting to 1 1/4-percent to 5-percent of the total Fund loan depending upon size of project, plus out-of-pocket consultant and legal fees for account of the borrower. An amount of these fees equal to 1-percent will be remitted to the Fund for its and the PPC's expenses.

ID: ANNEX2

ANNEX X

POWER GENERATION CAPACITY AND LOAD SHEDDING ESTIMATES

Table X-1: Power Generation Capacity Estimates, 1987-88

Milestones	Year	Total Capacity Planned by the end of the year (MW)	Total Planned Capacity Without Private Power (MW)	Maximum Expected Capacity Without Private Power 1/ (MW)	Maximum Available Capacity Without Private Power 2/ (MW)
End of the Sixth Plan	1987-88	6,716	6,716	6,716	4,319
	1988-89	7,206	7,206	7,023	4,564
	1989-90	8,314	8,314	7,786	5,175
	1990-91	9,084	8,954	8,270	5,562
	1991-92	11,928	10,598	9,421	6,199
End of the Seventh Plan	1992-93	13,112	11,782	10,214	6,900
	1993-94	13,528	11,992	10,361	7,027
	1994-95	14,221	12,185	10,491	7,131
	1995-96	16,181	13,545	11,443	7,322
	1996-97	16,941	13,905	11,695	7,883
End of the Eighth Plan	1997-98	17,241	13,905	11,695	7.934

Source: Draft Seventh Five Year Plan and USAID Estimates.

1/ Assumes that WAPDA will complete 70 percent of planned capacity expansion activities during the Seventh and Eighth Plan periods.

2/ Based on water flow data for January (the month with the greatest load shedding) and assuming that 80% of thermal capacity is available to alleviate load shedding -- i.e., scheduled and unscheduled outages will not exceed 20 percent.

Table X-2: Expected Load shedding Assuming an Effective Program of Load Management and Energy Conservation (LM & EC) to Limit Demand.

MILESTONE	YEAR	PEAK DEMAND (JAN)	LM&EC IN (JAN)	PEAK DEMAND WITH LM&EC (JAN)	MAXIMUM EXPECTED CAPACITY WITHOUT PRIVATE POWER 1/	MAXIMUM AVAILABLE CAPACITY WITHOUT PRIVATE POWER 2/	LOAD-SHEDDING WITHOUT PRIVATE SECTOR POWER AND WITH LM&EC (JAN)
	1	2	3	4=2-3	5	6	7=6-4
End of the Sixth Plan	1987-88	5,492		5,492	6,716	4,319	- 1,173
	1988-89	6,110	63	6,047	7,023	4,564	- 1,483
	1989-90	6,783	122	6,661	7,786	5,175	- 1,486
	1990-91	7,582	280	7,302	8,270	5,562	- 1,740
	1991-92	8,486	439	8,047	9,421	6,199	- 1,848
End of the Seventh Plan	1992-93	9,263	649	8,614	10,214	6,900	- 1,714
	1993-94	10,189	845	9,344	10,361	7,027	- 2,317
	1994-95	11,208	1,039	10,169	10,491	7,131	- 3,038
	1995-96	12,328	1,233	11,095	11,443	7,322	- 3,773
	1996-97	13,561	1,330	12,231	11,695	7,883	- 4,348
End of the Eighth Plan	1997-98	14,917	1,427	13,490	11,695	7,934	- 5,556

Source: Draft Seventh Plan and USAID estimates

1/ Maximum expected capacity assumes that only 70 % of the GOP's generation expansion plan will be achieved. This should be compared with the actual completion rate of 53 % during the Sixth Plan.

2/ Maximum available capacity is based on historical water flow data for January (which is the month of lowest water flow) to estimate hydel capacity and assumes that 80% of thermal capacity is available (only 20% for scheduled and unscheduled outages) to alleviate load shedding.

Table X-3: Expected load shedding Assuming No Effective Program of Load Management and Energy Conservation (LM & EC) to Limit Demand.

MILESTONE	YEAR	PEAK DEMAND (JAN)	MAXIMUM EXPECTED CAPACITY WITHOUT PRIVATE POWER 1/	MAXIMUM AVAILABE CAPACITY WITHOUT PRIVATE POWER 2/	LOAD-SHEDDING WITHOUT PRIVATE POWER AND WITHOUT LM&EC (JAN)
	1	2	3	4	5=4-2
End of the Sixth Plan	1987-88	5,492	6,716	4,319	- 1,173
	1988-89	6,110	7,023	4,564	- 1,546
	1989-90	6,783	7,786	5,175	- 1,608
	1990-91	7,582	8,270	5,562	- 2,020
	1991-92	8,486	9,421	6,199	- 2,287
End of the Seventh Plan	1992-93	9,263	10,214	6,900	- 2,363
	1993-94	10,189	10,361	7,027	- 3,162
	1994-95	11,208	10,491	7,131	- 4,077
	1995-96	12,328	11,443	7,322	- 5,006
	1996-97	13,561	11,695	7,883	- 5,678
End of the Eighth Plan	1997-98	14,917	11,695	7,934	- 6,983

Source: Seventh Five Year Plan and USAID estimates

1/ Maximum expected capacity assumes that only 70 % of the GOP's generation expansion plans will be achieved. This will be compared with 53 % which was achieved during the Six Plan.

2/ Maximum available capacity is based on historical water flow data for January (which is the month of lowest water flow) to estimate hydel generation capacity and assumes that 80% of thermal capacity is available (only 20 % for scheduled and unscheduled outages) to alleviate load shedding.

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ANNEX - Y

OFFICIAL FILE

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

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Date ....

THE ADMINISTRATOR

Log #3572

July 12, 1988

ACTION

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Mr. James A. Norris
USAID/Pakistan
Agency for International Development
Washington, D.C. 20520

Dear Jim:

I am pleased to send you our recently published report on "Power Shortages in Developing Countries: Magnitude, Impacts, Solutions, and the Role of the Private Sector."

Our analysis reveals that power shortages exist in over half of A.I.D.-assisted countries. These shortages often exceed 10% of the existing generation capability, causing significant reductions in economic growth. If the current trends of increasing energy demand continue, over $125 billion per year in capital expenditures will be needed over the next twenty years. Developing nations are not able to sustain this level of expenditures.

Eliminating electric power shortages requires the innovation, experience and financial participation of the private sector in power generation and system operation.

A.I.D., in conjunction with multilateral development banks and other donor countries, has been in the forefront of promoting the concept of private participation in the electric power sector of developing countries. Looking to the future, A.I.D. anticipates playing a special role, outlined in the report, in helping mobilize and direct private sector resources to improve the power systems in these countries.

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After reviewing the report, please feel free to forward any comments and suggestioins you believe might prove useful, particularly as they concern encouraging the participation of the private sector in energy development.

If you would like further information or copies, please contact Dr. James B. Sullivan, Director of the Office of Energy, SA-18 Room 508, Washington, D.C. 20523 (703-875-4203).

Sincerely,

Alan Woods

Enclosure:
a/s

ANNEX - Z
Case Studies of Private Sector Projects

KEY TECHNICAL AND COST DATA OF PROJECTS REVIEWED

	Project 1	Project 2	Project 3	Project 4	Project 5
System Configuration	Diesel Engine	Boiler/System Turbine	AFB/Steam Turbine	Gas Turbine	Steam Turbine Industrial Cogeneration
Net System Output (MW)	114	570	49.5	9.5	3.4
Steam Production, lb/hr	NA	NA	NA	NA	62000
System Capacity Factor (%)	60	60	60	60	60
Fuel Used	Furnace Oil	Furnace Oil	Coal	Med Btu Gas	Gas
Heat Rate (Btu/kWh):	8750	9600	11900	11500	26000
Fuel Cost	94.5 ($/tonne)	94.5 ($/tonne)	20 ($/tonne)	1.5 ($/mmBtu)	2.74 ($/mmBtu)
Steam Sales Price, $ /000 lb	NA	NA	NA	NA	3.0
Total Project Cost ($ million)*	60.41	340.0	60.75	6.50	3.75
US Equipment	45.00	146.0	32.70	4.94	1.32
US Other	0.00	73.0	11.90	0.65	0.25
Local Equipment	1.16	19.54	11.40	0.26	1.48
Local Other	14.21	161.46	4.75	0.65	0.70

(*) : Exclusive of import duties and interest during construction.

Note: All projects have at least a 20-year life; tax rate at 40 percent; tax exemption period of 5 years.

SOURCE: RCG/Hagler, Bailly, Inc.

Exhibit 2

DEBT SOURCES ANALYZED

Debt Sources	Interest Rate Range (%)	Exchange Insurance (%)	Total Cost (%)	Maturity Period (Years)	Grace Period (Years)
U.S. supplier credit	8	3-4	11-12	10	0-2
Locally Manufactured Machinery Fund	3	0	3	8-10	0
Private Sector Window Loan (PSW)	10-11	3-4	13-15	20	5
Local Commercial Bank Financing	15	0	15	8-10	0
International Finance Corporation	11	3-4	14-15	10	0-2

Debt Sources	Conventional Debt Mix (%)	Private Sector Window
U.S. Supplier Credit	50-75	20-45
Locally Manufactured Machinery Fund	0-20	0-20
Private Sector Window Loan (PSW)	0	30
Local Commercial Bank Financing	10-20	LN
International Finance Corporation	LN	0
Weighted Average Cost of Debt (%)	9.80	9.50
Weighted Maturity (years)	9.50	11.10

NOTE: LN= Limited Need.

Source: RCG/Hagler, Bailly, Inc.

Exhibit C.1

Specification of the 120 MW Diesel Power Plant

TECHNICAL/OPERATING SPECIFICATIONS

Nameplate System Output (MW):	120.00
System Configuration:	Diesel Engine (6x20)
Auxiliary Consumption (%):	5.00
Steam Production, lb/hr	0.00
System Life (yrs)	20
System Capacity Factor (%):	60.00
Fuel Unit:	Metric Tonne
Heat Rate (Units/kWh):	0.000221
Fuel Cost, $/Unit:	95.39
Fuel Cost Escalation Rate (%/yr):	0.00
Variable O&M Costs, (c/kwh):	0.470
Fixed O&M Costs ($/MW/yr):	0
O&M Cost Escalation Rate (%/yr):	0.00
Working Capital/Debt Reserve ($MM):	1.44
Salvage Value(% of IRR Depreciable Base)	0.00
Length of Construction Period (years)	3.00

PRICE SPECIFICATIONS

	Scenario 1	Scenario 2	Scenario 3
Include this scenario in sensitivities?	Yes	Yes	Yes
Power sales price, 1st period (c/kWh)	5.50	6.05	5.00
Power sales price, 2nd period (c/kWh)	4.50	4.95	4.10
Year in which 2nd period begins	11	11	11
Steam Sales Price, $ /000 lb	0.00	0.00	0.00

FISCAL SPECIFICATIONS

Tax Rate on Project Profits (%):	40.00
Tax Depreciation Period (yrs):	20.00
Depreciation (SLD=St. Line, DDB=Double):	DDB
Tax Exemption Period (yrs):	5.00
Import Levies (% of CIF cost of imported equipment):	0.00
Worker's Participation Profit Fund (% of pretax profit):	5.00
Witholding Tax on FX Dividends:	10.00

Exhibit C.1 (Continued)

FINANCING SPECIFICATIONS

Debt Sources	Total ($000 000)	Levelized Debt (Y/N)	Rate (%)	Period AC(Yrs)	Period (Yrs)	Year 1	Year 2	Year 3	Currency	Exchange Insurance(%
Supplier's Credit (US):	41.26	Y	8.00	0.00	10.00	12.38	16.51	12.38	$	3.50
Locally Mfd Machinery Fund:	1.16	Y	3.00	0.00	8.00	0.35	0.46	0.35	Rs	0.00
Private Sector Window:	0.00	Y	10.50	5.00	20.00	0.00	0.00	0.00	$	3.50
Local Term Financing excl. ins. & duty	2.87	Y	14.00	0.00	8.00	0.86	1.15	0.86	Rs	0.00
International Term Financing:	0.00	Y	11.00	0.00	10.00	0.00	0.00	0.00	$	3.50
Working Capital Loan:	----	Y	15.00	0.00	----	----	----	----		----

Equity Sources	Total ($000 000)	Target Return (%) Construction	Target Return (%) Operation	Contribution by Year Year 1	Contribution by Year Year 2	Contribution by Year Year 3	Witholding Tax (%)	Currency
Local Sponsor:	4.53	20.00	20.00	1.36	1.81	1.36	0.00	Rs.
Local Public Offering:	9.06	20.00	20.00	2.72	3.62	2.72	0.00	Rs.
U.S. Sponsor:	4.53	20.00	20.00	1.36	1.81	1.36	10.00	
Other Equity:	0.00	0.00	0.00	0.00	0.00	0.00		

Exchange Rate (Local Curr/$): 17.50

Interest on Limited Dividends 8%

Composition of project costs	Total
Total Project Cost ($000 000):	60.41
US Equipment:	13.27
US Other	0.00
Non-U.S. Equipment imported:	31.77
Non-U.S. Imported Other:	0.00
Local Equipment:	1.16
Local Other:	14.21

SOURCE: RCG/Hagler, Bailly, Inc.

Exhibit C.2
Comparison of Project Financial Performance
With and Without PSW Financing

	Scenario 1	Scenario 2	Scenario 3
Power Sales Price 1st Period (cents/kWh)	5.50	6.05	5.00
Power Sales Price 2nd Period (cents/kWh)	4.50	4.95	4.10
Year In Which Second Period Begin	11	11	11
Project Rate of Return (%) */			
Base Case	23.3/23.9	31.4/32.6	13.6/15.8
PSW Case	23.3/25.5	32.8/34.4	14.0/16.3

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*/ The first figure is for limited distribution of dividends and the second for unlimited distribution.

Exhibit D.1

Specifications of the 600 MW Imported Oil Fired Power Project

TECHNICAL/OPERATING SPECIFICATIONS

Nameplate System Output (MW):	600.00
System Configuration:	Boiler steam turbine
Auxiliary Consumption (%):	5.00
Steam Production, lb/hr	0.00
System Life (yrs)	25.00
System Capacity Factor (%):	60.00
Fuel Unit:	Metric Tonne
Heat Rate (Units/kWh):	0.000235
Fuel Cost, $/Unit:	94.29
Fuel Cost Escalation Rate (%/yr):	0.00
Variable O&M Costs, (c/kwh):	0.110
Fixed O&M Costs ($/MW/yr):	15,000
O&M Cost Escalation Rate (%/yr):	0.00
Working Capital/Debt Reserve ($MM):	9.90
Salvage Value(% of IRR Depreciable Base)	0.00
Length of Construction Period (years)	3.00

PRICE SPECIFICATIONS

	Scenario 1	Scenario 2	Scenario 3
Power sales price, 1st period (c/kWh)	5.50	6.05	5.00
Power sales price, 2nd period (c/kWh)	4.50	4.95	4.10
Year in which 2nd period begins	11	11	11
Steam Sales Price, $ /000 lb	0.00	0.00	0.00

FISCAL SPECIFICATIONS

Tax Rate on Project Profits (%):	40.00
Tax Depreciation Period (yrs):	20.00
Depreciation (SLD=St. Line, DDB=Double):	DDB
Tax Exemption Period (yrs):	5.00
Import Levies (% of CIF cost of imported equipment):	15.00
Worker's Participation Profit Fund (% of pretax profit):	5.00
Witholding Tax on FX Dividends:	10.00

Exhibit D.2
Comparison of Project Financial Performance
With and Without PSW Financing

	Scenario 1	Scenario 2	Scenario 3
Power Sales Price 1st Period (cents/kWh)	5.50	6.05	5.00
Power Sales Price 2nd Period (cents/kWh)	4.50	4.95	4.10
Year In Which Second Period Begin	11	11	11
Project Rate of Return (%) */			
Base Case	15.3/16.5	22.1/23.3	9.9/10.6
PSW Case	13.8/15.0	21.5/22.8	7.4/7.8

---

*/ The first figure is for limited distribution of dividends and the second for unlimited distribution.

Exhibit D.1 (Continued)

FINANCING SPECIFICATIONS

Debt Sources	Total ($000 000)	Levelized Debt (Y/N)	Interest Rate (%)	Grace Period AC(Yrs)	Maturity Period (Yrs)	Drawdown by Year Year 1	Year 2	Year 3	Currency	Foreign Exchange Insurance(%)
Supplier's Credit (US):	80.00	Y	8.00	0.00	10.00	20.00	40.00	20.00	$	3.50
Locally Mfd Machinery Fund:	19.54	Y	3.00	0.00	8.00	4.89	9.77	4.89	Rs	0.00
Private Sector Window:	0.00	Y	10.50	5.00	20.00	0.00	0.00	0.00	$	3.50
Local Term Financing excl. ins. & duty	58.96	Y	14.00	0.00	8.00	14.74	29.48	14.74	Rs	0.00
International Term Financing:	96.50	Y	11.00	0.00	10.00	24.13	48.25	24.13		3.50
Working Capital Loan:	----	Y	15.00	0.00	-----	-----	-----	-----		----

Equity Sources	Total ($000 000)	Target Return (%) Construction	Operation	Contribution by Year Year 1	Year 2	Year 3	Witholding Tax (%)	Currency
Local Sponsor:	28.26	20.00	20.00	7.07	14.13	7.07	0.00	Rs.
Local Public Offering:	56.53	20.00	20.00	14.13	28.26	14.13	0.00	Rs.
U.S. Sponsor:	28.26	20.00	20.00	7.07	14.13	7.07	10.00	$
Other Equity:	0.00	0.00	0.00	0.00	0.00	0.00		

Exchange Rate (Local Curr/$):	17.50
Interest on Limited Dividends	8%

Composition of project costs	Total
Total Project Cost ($000 000):	340.00
US Equipment:	146.00
US Other	73.00
Non-U.S. Equipment imported:	0.00
Non-U.S. Imported Other:	0.00
Local Equipment:	19.54
Local Other:	101.46

SOURCE: RCG/Hagler, Bailly, Inc.

Exhibit E.1

Specifications of the 55 MW Coal Power Project

TECHNICAL/OPERATING SPECIFICATIONS

Nameplate System Output (MW):	55.00
System Configuration:	Boiler Steam Turbine
Auxiliary Consumption (%):	10.00
Steam Production, lb/hr	0.00
System Life (yrs)	20
System Capacity Factor (%):	60.00
Fuel Unit:	Metric Tonne
Heat Rate (Units/kWh):	0.000676
Fuel Cost, $/Unit:	20.00
Fuel Cost Escalation Rate (%/yr):	0.00
Variable O&M Costs, (c/kwh):	0.270
Fixed O&M Costs ($/MW/yr):	57,272
O&M Cost Escalation Rate (%/yr):	0.00
Working Capital/Debt Reserve ($MM):	0.75
Salvage Value(% of IRR Depreciable Base)	0.00
Length of Construction Period (years)	3.00

PRICE SPECIFICATIONS

	Scenario 1	Scenario 2	Scenario 3
Power sales price, 1st period (c/kWh)	5.50	6.05	5.00
Power sales price, 2nd period (c/kWh)	4.50	4.95	4.10
Year in which 2nd period begins	11	11	11
Steam Sales Price, $ /000 lb	0.00	0.00	0.00

FISCAL SPECIFICATIONS

Tax Rate on Project Profits (%):	40.00
Tax Depreciation Period (yrs):	20.00
Depreciation (SLD=St. Line, DDB=Double):	DDB
Tax Exemption Period (yrs):	5.00
Import Levies (% of CIF cost of imported equipment):	15.00
Worker's Participation Profit Fund (% of pretax profit):	5.00
Witholding Tax on FX Dividends:	10.00

Exhibit E.1 (Continued)

FINANCING SPECIFICATIONS

Debt Sources	Total ($000 000)	Levelized Debt (Y/N)	Interest Rate (%)	Grace Period AC(Yrs)	Maturity Period (Yrs)	Drawdown by Year Year 1	Year 2	Year 3	Currency	Foreign Exchange Insurance(%)
Supplier's Credit (US):	36.00	Y	8.00	0.00	10.00	0.00	21.90	14.60	$	3.50
Locally Mfd Machinery Fund:	6.00	Y	3.00	0.00	8.00	0.00	3.60	2.40	Rs	0.00
Private Sector Window:	0.00	Y	10.50	5.00	20.00	0.00	0.00	0.00	$	3.50
Local Term Financing excl. ins. & duty	3.06	Y	14.00	0.00	8.00	0.00	1.84	1.23	Rs	0.00
International Term Financing:	0.00	Y	11.00	0.00	10.00	0.00	0.00	0.00	$	3.50
Working Capital Loan:	----	Y	15.00	0.00	----	----	----	----		----

Equity Sources	Total ($000 000)	Target Return (%) Construction	Operation	Contribution by Year Year 1	Year 2	Year 3	Witholding Tax (%)	Currency
Local Sponsor:	5.05	20.00	20.00	0.00	3.03	2.02	0.00	Rs.
Local Public Offering:	10.11	20.00	20.00	0.00	6.06	4.04	0.00	Rs.
U.S. Sponsor:	5.05	20.00	20.00	0.00	3.03	2.02	10.00	Rs.
Other Equity:	0.00	0.00	0.00	0.00	0.00	0.00		

Exchange Rate (Local Curr/$): 17.50

Interest on Limited Dividends 8%

Composition of project costs	Total
Total Project Cost ($000 000):	60.75
US Equipment:	36.50
US Other	8.10
Non-U.S. Equipment imported:	0.00
Non-U.S. Imported Other:	0.00
Local Equipment:	6.00
Local Other:	11.15

SOURCE: RCG/Hagler, Bailly, Inc.

Exhibit E.2
Comparison of Project Financial Performance
With and Without PSW Financing

	Scenario 1	Scenario 2	Scenario 3
Power Sales Price 1st Period (cents/kWh)	5.50	6.05	5.00
Power Sales Price 2nd Period (cents/kWh)	4.50	4.95	4.10
Year In Which Second Period Begin	11	11	11
Project Rate of Return (%) */			
Base Case	-6.2/-4.0	-2.6/-0.1	-10.7/-7.9

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*/ The first figure is for limited distribution of dividends and the second for unlimited distribution.

Exhibit F.1

SPECIFICATIONS of the 10 MW Gas-Fired Power Project

TECHNICAL/OPERATING SPECIFICATIONS

Nameplate System Output (MW):	10.00
System Configuration:	Gas Turbine
Auxiliary Consumption (%):	5.00
Steam Production, lb/hr	0.00
System Life (yrs)	20
System Capacity Factor (%):	60.00
Fuel Unit:	mmBtu
Heat Rate (Units/kWh):	0.0115
Fuel Cost, $/Unit:	1.50
Fuel Cost Escalation Rate (%/yr):	0.00
Variable O&M Costs, (c/kwh):	0.000
Fixed O&M Costs ($/MW/yr):	20,000
O&M Cost Escalation Rate (%/yr):	0.00
Working Capital/Debt Reserve ($MM):	0.09
Salvage Value(% of IRR Depreciable Base)	0.00
Length of Construction Period (years)	3.00

PRICE SPECIFICATIONS

	Scenario 1	Scenario 2	Scenario 3
Power sales price, 1st period (c/kWh)	5.50	6.05	5.00
Power sales price, 2nd period (c/kWh)	4.50	4.95	4.10
Year in which 2nd period begins	11	11	11
Steam Sales Price, $ /000 lb	0.00	0.00	0.00

FISCAL SPECIFICATIONS

Tax Rate on Project Profits (%):	40.00
Tax Depreciation Period (yrs):	20.00
Depreciation (SLD=St. Line, DDB=Double):	DDB
Tax Exemption Period (yrs):	5.00
Import Levies (% of CIF cost of imported equipment):	15.00
Worker's Participation Profit Fund (% of pretax profit):	5.00
Witholding Tax on FX Dividends:	10.00

Exhibit F.1 (Continued)

FINANCING SPECIFICATIONS

Debt Sources	Total ($000 000)	Levelized Debt (Y/N)	Interest Rate (%)	Grace Period AC(Yrs)	Maturity Period (Yrs)	Drawdown by Year Year 1	Year 2	Year 3	Currency	Foreign Exchange Insurance(%)
Supplier's Credit (US):	4.00	y	8.00	0.00	10.00	0.00	1.60	2.40	$	3.50
Locally Mfd Machinery Fund:	0.00	y	3.00	0.00	8.00	0.00	0.00	0.00	Rs	0.00
Private Sector Window:	0.00	y	10.50	5.00	20.00	0.00	0.00	0.00	$	3.50
Local Term Financing excl. ins. & duty	0.60	y	14.00	0.00	8.00	0.00	0.20	0.40	Rs	0.00
International Term Financing:	0.00	y	11.00	0.00	10.00	0.00	0.00	0.00	$	3.50
Working Capital Loan:	----	y	15.00	0.00	----	----	----	----		----

Equity Sources	Total ($000 000)	Target Return (%) Construction	Operation	Contribution by Year Year 1	Year 2	Year 3	Witholding Tax (%)	Currency
Local Sponsor:	0.48	20.00	20.00	0.00	0.19	0.29	0.00	Rs.
Local Public Offering:	0.95	20.00	20.00	0.00	0.38	0.57	0.00	Rs.
U.S. Sponsor:	0.48	20.00	20.00	0.00	0.19	0.29	10.00	
Other Equity:	0.00	0.00	0.00	0.00	0.00	0.00		

Exchange Rate (Local Curr/$): 17.50

Interest on Limited Dividends 8%

Composition of project costs	Total
Total Project Cost ($000 000):	6.50
US Equipment:	4.94
US Other	0.65
Non-U.S. Equipment imported:	0.00
Non-U.S. Imported Other:	0.00
Local Equipment:	0.26
Local Other:	0.65

SOURCE: RCG/Hagler, Bailly, Inc.

Exhibit F.2
Comparison of Project Financial Performance
With and Without PSW Financing

	Scenario 1	Scenario 2	Scenario 3
Power Sales Price 1st Period (cents/kWh)	5.50	6.05	5.00
Power Sales Price 2nd Period (cents/kWh)	4.50	4.95	4.10
Year In Which Second Period Begin	11	11	11
Project Rate of Return (%) */			
Base Case	19.4/21.4	28.3/30.0	12.0/14.3
PSW Case	20.5/23.2	30.3/32.5	12.2/14.6

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*/ The first figure is for limited distribution of dividends and the second for unlimited distribution.

CONDITIONS AND COVENANTS

A.I.D. shall include the substance of the following Conditions Precedent and Covenants in the Project Agreement.

I. CONDITIONS PRECEDENT TO DISBURSEMENT

Prior to any disbursement for Component II of the project, i.e., in support of the Private Sector Energy Development Fund, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the grantee shall furnish to A.I.D., in form and substance satisfactory to A.I.D.,

1. Guidelines for the review and evaluation of private sector proposals by the GOP;

2. Evidence of establishment and staffing of a Private Power Cell in the Ministry of Water and Power;

3. Evidence of establishment and staffing of a Fund and the execution of an administration agreement between the Government of Pakistan and the Fund (NDFC/PED); and

4. Guidelines for the operation of the Fund, including guidelines for appraisal, approval and supervision of subproject loans by the Fund.

II. COVENANTS

1. The Grantee shall provide adequate support during the entire life of the project to the various institutions which it is committed either to establish or to strengthen pursuant to this project.

2. The Grantee shall permit, and exert its best efforts to make available, adequate commercial and DFI rupee credit in support of private sector proposals to be financed through the Fund.

3. The Grantee agrees to undertake or cause to be undertaken a study to assess the merit of establishing the Fund as an autonomous finance institution, and to review the recommendations of the study and to agree on a timetable for the implementation of the agreed recommendations.

4. The Grantee agrees to include provisions in all loans made by the Fund requiring compliance with environmental guidelines and resettlement requirements of the World Bank and USAID.

5. The Grantee agrees, in the event a decision is made to establish the Fund as an autonomous entity, that no windfall gains will accrue to the ultimate owners.

6. The Grantee agrees that loan repayments to the fund of interest and principal originally financed with A.I.D. project funds will be relent by the Fund for activities consistent with the objectives of the Private Sector Power Project.

Codrafted:PDM:RWNachtrieb/RLA:Carter/E&E:JMorgan

Clear: DD(A) - Peter Davis (draft)
DIR - James A. Norris (draft)

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