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**STAFF APPRAISAL REPORT**

**PAKISTAN**

**PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT II**

**OCTOBER 28, 1994**

**Energy and Infrastructure Operations Division  
Country Department III  
South Asia Region**

## **CURRENCY EQUIVALENTS**

(as of September 1994)

Currency Unit = Pakistan Rupee (Rs)

US\$1.00 = Rs 30.80

Rs 1 = US\$0.03

Rs 1 = 100 paisas (Ps.)

### **GOP Fiscal Year**

July 1 - June 30

## **MEASURES AND EQUIVALENTS**

1 Kilometer	-	0.6214 miles
1 Ton	-	1,000 kilograms
1 Kilovolt	-	1,000 volts
1 Megawatt (MW)	-	1,000 kilowatts
1 Kilowatt Hour(kWh)	-	1,000 watt hours
BCDF	-	Billion cubic Feet per Day
BOPD	-	Barrels of Oil Per Day
MCF	-	Thousand Cubic Feet
TCF	-	Trillion Cubic Feet
TPY	-	Tons per Year

## **ABBREVIATIONS AND ACRONYMS**

ADB	-	Asian Development Bank
APL	-	Asia Petroleum Limited
BOO	-	Build-Own-Operate
CDC	-	Commonwealth Development Corporation
CIDA	-	Canadian International Development Agency
CMU	-	Cofinanciers' Memorandum of Understanding
COFACE	-	Compagnie Française d'Assurance pour le Commerce Extérieur (France)
ECAs	-	Export Credit Agencies
ECC	-	Economic Coordinating Committee
ECO	-	Expanded Co-financing Operation
ENERCON	-	National Energy Conservation Center
ERG	-	Energy Review Group
ESL	-	Energy Sector Loan
ESMAP	-	Energy Strategy Management Assistance Program
ESSA	-	Environmental and Social Soundness Assessment
EUAD	-	Environment and Urban Affairs Division
FAS	-	Fuel Adjustment Surcharge
FSA	-	Fuel Supply Agreement
Fund	-	Private Sector Energy Development Fund

FERI	-	Foreign Exchange Rate Insurance
GDR	-	Global Deposit Receipts
GOP	-	Government of Pakistan
HESS	-	Household Energy Strategy Study
HPC	-	Hub Power Complex
HUBCO	-	Hub Power Company
JEXIM	-	The Export-Import Bank of Japan
KESC	-	Karachi Electric Supply Corporation
LES	-	Long-Term Energy Sector Strategy
LOS	-	Letter of Support
LRMC	-	Long Run Marginal Cost
LTCF	-	Long Term Credit Fund
MCF	-	Thousand Cubic Feet
MHW	-	Ministry of Housing and Works
MITI	-	Ministry of International Trade and Industry (Japan)
MPNR	-	Ministry of Petroleum and Natural Resources
MOP	-	Ministry of Production
MPD	-	Ministry of Planning and Development
MWP	-	Ministry of Water and Power
NCS	-	National Conservation Strategy
NDFC	-	National Development Finance Corporation
NRL	-	National Refineries Limited
ODA	-	Overseas Development Administration (United Kingdom)
OECF	-	Overseas Economic Cooperation Fund (Japan)
OGDC	-	Oil and Gas Development Corporation
O&MA	-	Operations and Maintenance Agreement
PED	-	Private Energy Division
PMDC	-	Pakistan Mineral Development Corporation
PP	-	Petroleum Policy
PPA	-	Power Purchase Agreement
PPIB	-	Private Power and Infrastructure Board
PPC	-	Private Power Cell
PSEDP I	-	Private Sector Energy Development Project (Ln. 2982-PAK)
PSO	-	Pakistan State Oil Company
SA	-	Shareholders Agreement for Hub Power Company
SACE	-	Sezione Speciale per l'Assicurazione del Credito all Esportazione (Italy)
SAP	-	Social Action Program
SBP	-	State Bank of Pakistan
SNGPL	-	Sui Northern Gas Pipeline Company, Ltd.
SSGC	-	Sui Southern Gas Corporation
TKC	-	Turnkey Construction Contract
TPY	-	Tons per Year
USAID	-	United States Agency for International Development
WAPDA	-	Water and Power Development Authority



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## PAKISTAN

### PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT II

#### Loan and Project Summary

<u>Borrower:</u>	Islamic Republic of Pakistan
<u>Beneficiaries:</u>	Private sector borrowers who would design, finance, construct, own and operate energy and energy related infrastructure facilities; and GOP for consulting services.
<u>Amount:</u>	US\$250 million
<u>Terms:</u>	20 years, including five years grace, at the Bank's standard variable interest rate.
<u>Cofinanciers:</u>	Export-Import Bank of Japan US\$110 million and the Government of France US\$10 million.
<u>Onlending Terms:</u>	<p><u>In the case of the subloan for the Hub Power Project: (i) during the construction of the Investment Project for which the Subloan has been made, a fixed rate of 14% per annum; (ii) after completion of construction of such Investment Project but before all loans other than the Subloan for the Investment Project which are senior to the subloan have been repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year United States Treasury Note rate plus the Foreign Exchange Rate Insurance (FERI) Margin plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 250 basis points; and (iii) after repayment of such senior loans and until the Subloan has been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year US Treasury Note rate plus the FERI Margin plus a spread of 400 basis points, and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 350 basis points.</u></p> <p>In the case of all other subloans: (i) <u>during the construction</u> of the Investment Projects for which the Subloans have been made, a fixed rate equal to the greater of: a. the sum of the prevailing Five-Year US Treasury Note rate plus a spread of 200 basis points, and b. the sum of the prevailing World Bank Lending Rate plus a spread of 150 basis points; (ii) <u>after completion of construction of such Investment Projects but before all loans other than the Subloans for the Investment Projects which are senior to the Subloans have been repaid</u>, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year US Treasury Note rate plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus</p>

a spread of 250 basis points; and (iii) after repayment of such senior loans and until the Subloans have been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing one-Year US Treasury Note rate plus a spread of 400 basis points, and b. the sum of the prevailing World Bank Lending Rate plus a spread of 350 basis points.

Project

Description:

The proposed Project will: (a) replenish the Private Sector Energy Development Fund (the Fund) to provide subordinated long-term loans to private sector entities to finance goods, services, and associated costs required for the implementation of: (i) a power generation subproject currently under construction which would be owned and operated by HUBCO, a private sector company; (ii) the pipeline to be constructed, owned, and operated by Asia Petroleum Limited (APL) for the transportation of fuel oil from Port Qasim to Point Khalifa; and (iii) other private power generation and energy related infrastructure subprojects currently at an advanced stage of preparation. Priority in receiving financing would be accorded to subprojects which would achieve financial close in at most six months from the effectiveness of the proposed Project; (b) fund the continued operation of the Private Power and Infrastructure Board (PPIB) and the Fund, covering staff, consulting services, training, and facilities and equipment; and (c) provide consulting services to: (i) assist GOP to outline the mandate for the PPIB, its management and reporting structure; (ii) assist the Fund to: a. formulate its mandate operate as an autonomous, commercially oriented Long Term Credit Fund (LTCF); b. develop the guidelines for the Fund/LTCF to allow for its financing of energy related infrastructure subprojects; and c. develop environmental and resettlement assessment guidelines for the Fund/LTCF, and strengthen its capabilities for monitoring compliance with these guidelines during the construction and operation phases.

Benefits

and Risks:

The proposed Project will ensure that the Hub Power Subproject, the first private power plant to be financed by the Fund, is brought to financial close. The proposed Project will also be instrumental in the implementation of about another 700 MW of privately built, owned and operated power generation plants that are being prepared on a fast track. It will also partly finance the first petroleum transport pipeline to be owned and operated by the private sector (APL). In addition, the proposed Project will assist GOP in strengthening the institutions responsible for the approval, negotiations and financing of private sector energy subprojects. This will streamline the process and reduce the time required for achieving financial close and hence contribute to the achievement of Government's policy for promoting a greater role for private sector in energy.



The risks depend on the component involved. The financing being provided for Hub Subproject involves very little risks as equity and debt, both senior and subordinate, are fully committed and construction of the power plant is about half way to commissioning. As for the component earmarked for APL's pipeline, detailed engineering is underway, and consents and agreements, tariffs, construction arrangements and financing plan have all been negotiated and finalized. The only major risk associated with this component relate to delays in commissioning. Measures have been taken to allow the contractor to accelerate construction by compressing the time required for clearances, and allowing him to take full responsibility for mobilizing the remaining gap in debt financing. Regarding the component covering potentially new power generation subprojects, the risks relate mainly to GOP's commitment to maintaining the enabling environment and negotiating Security Packages (SP), including tariff and indexation, that would allow the subprojects to be bankable. In order to mitigate this risk, a number of covenants have been agreed with GOP for the periodic review of policies to ensure that the negotiated agreements for the new subprojects are financially. Moreover, priority in accessing the resources earmarked for new subprojects under the proposed Project will be given to those that satisfy the Bank that their equity and senior debt are fully subscribed or underwritten to allow for financial close to take place at most 6 months from the effectiveness of the proposed Project.

### Estimated Cost

Table 1.1

	Local	Foreign	Total
	----- US\$ million -----		
Hubco	170*	1,662	1,832
APL	20	80	100
Other Projects	90	357	447
TA	3	8	11
<b>TOTAL COST</b>	<b>283</b>	<b>2,107</b>	<b>2,390</b>

\* Includes revenue during construction.

Private sector power projects are free of taxes and duties

**Financing Plan:**

Table 1.2

	Local	Foreign	Total	%
	-----US\$ million-----			
Proposed Bank Loan (PSEDP II)		250	250	10.5
PSEDP I		399	399	16.7
Cofinanciers		124	122	5.2
Foreign Commercial Banks		463	463	19.4
Local Commercial Banks	140		140	5.8
Export Credit Agencies		385	385	16.1
Multilateral Agencies		23	23	0.9
Foreign Equity		462	462	19.3
Local Equity	87 <sup>1/</sup>		87	3.6
Internally Generated Funds	57		57	2.4
<b>TOTAL</b>	<b>284</b>	<b>2,106</b>	<b>2,390</b>	<b>100</b>

<sup>1/</sup> Includes US\$ 3 million equivalent of contribution by GOP to PPIB.

**Estimated Bank Disbursements:**

Table 1.3

	FY95	FY96	FY97	FY98
	-----US\$ million-----			
Fiscal Year	98	89	38	35
Cumulative	98	177	215	250

**Economic Rate of Return:**

Subprojects in the power subsector are expected to yield an internal financial rate of return, of about 17% expressed in US Dollars. Consistent with GOP's Petroleum Policy, subprojects in the energy related infrastructure would be expected to yield a financial rate of return of 25%.

**Poverty Category:** Not applicable.

## **PAKISTAN**

### **PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT II**

#### **STAFF APPRAISAL REPORT**

##### **I. INTRODUCTION**

1.1 In 1988, the Government of Pakistan (GOP) initiated a program to restore fiscal and monetary balance, and liberalize the economy. The program, among other things, called for the rationalization of public sector expenditures. Budgetary allocations for the revenue earning public sector entities were reduced. Investment financing for these enterprises was to be secured through internally generated funds and borrowings from the domestic and international capital markets. This had a profound impact on the energy sector, which historically had accounted for over 33% of annual development allocations, as internally generated funds and projected borrowings fell short of the investments needed to meet the forecast demand. In response, GOP outlined a strategy for rationalizing the consumption of energy, and increasing the role of the private sector in energy to fill the gap left by the reduction in public sector investments.

1.2 GOP requested Bank assistance in identifying the constraints to greater private sector involvement in energy, and in preparing a plan for addressing these constraints. The Bank, assisted by consultants financed by USAID, identified three key constraints: (a) the absence of policy framework for private sector, i.e. incentives, fiscal treatment, repatriation of profits and capital, availability of foreign exchange, pricing, etc.; (b) the lack of long term finance for projects with relatively long gestation and economic life; and (c) the inadequacy of the institutional structure for the review, negotiation and approval of private sector projects.

1.3 The Bank, USAID, ODA and the Government of Japan assisted GOP in addressing the policy and institutional constraints, and in setting up a facility, the Private Sector Energy Development Fund (the Fund) to provide partial long term subordinated debt financing for energy investments. In 1988, the Board approved the Private Sector Energy Development Project (PSEDP I, Ln. 2982-PAK) which provided US\$150 million for financing the Fund. The loan was co-financed in the amount of US\$314 million by USAID, Nordic Investment Bank, and the Governments of France, Italy, Japan and the United Kingdom. National Development Finance Corporation (NDFC) manages the Fund for GOP. The Fund was structured to allow for its possible detachment from NDFC when its staff becomes fully trained and subprojects financed provided revenues to cover the cost of its operations.

1.4 At the time the Board approved PSEDP I, a number of potential power generation subprojects were under consideration by GOP. The Hub Power Subproject (4x323 MW) was the most advanced in its negotiations. It was expected to start construction within a year of the Board's approval of PSEDP I. Negotiations and mobilization of financing for the Hub were delayed by about four years because of: (a) six changes in government, which at times required renegotiation of key agreements; (b) the withdrawal of two of the main subcontractors, Kumagai Gumi for civil works and Toshiba for turbo generators, which caused a seven-month delay to reconstitute the construction consortium; (c) the Gulf War which suspended all activities in the development of the subproject for almost fourteen months; and (d) the declaration of interest on loans illegal by the Federal Shariat Court (an issue that took another seven months to resolve).

(As the Hub Power Subproject was the first private power investment to be considered by GOP, progress of other subprojects slowed down pending finalization of agreements and the mobilization of financing for Hub.)

1.5 When PSEDP I was designed, subordinate debt financing by the Fund was expected to provide the comfort required by commercial lenders to finance subprojects under limited recourse. Mobilizing the commercial debt financing for Hub has proven difficult in practice as lenders were not prepared to assume non-commercial risks in Pakistan because of the lack of track record in private infrastructure. In response, the Bank and the Japan Export Import Bank (JEXIM) structured together a co-guarantee, under the newly created Extended Co-financing Operation (ECO), to extend direct cover to a syndicate of commercial banks against risks associated with the failure by GOP and its public sector enterprises in meeting their obligations to the subproject company, the Hub Power Company (HUBCO). The Board approved the framework for the ECO Guarantee in October 1991, where the coverage of risks associated with the Hub would be shared with the private sector. Lenders and investors would assume all commercial risks during construction and operation phases, and GOP, through its guarantees backstopped by the ECO guarantee and the guarantees to be provided by the Export Credit Agencies (ECAs), would assume political and sovereign risks. The financing guaranteed by the ECO, JEXIM and the ECAs would together constitute the senior debt facility which would complement the subordinated debt facility to be financed under PSEDP I and the proposed Project.

1.6 In conjunction with its approval of the framework for the ECO, the Board also concurred with the recommendation for the disbursement of a mobilization financing to cover the initial and scheduled payments for the Turnkey Construction Contract (TKC) prior to financial close. This disbursement, which fixed the TKC price, was financed by the sponsors, the Bank, and the Italian and French Governments. The disbursement of the initial tranche under the mobilization financing was made in April 1993. This froze the TKC price and committed the contractors to commissioning the first unit by June 30, 1996. As of June 30, 1994, construction was ahead of schedule and commissioning of the power plant is expected earlier than agreed. At the time the Board approved the framework for the ECO Guarantee, the total financing requirements of the Hub Subproject was US\$1,560 million. Since then, the overall financing requirement of the subproject has increased to US\$1,832 million. The increase of US\$272 million covers the adjustment to the TKC price required to compensate for increases in the components of the TKC between July 2, 1991, when this contract was first signed and April 12, 1993 due to: (a) inflation in the countries providing the major equipment; (b) the appreciation of the Japanese Yen, and the depreciation of the Pakistani Rupee. In addition, the financing for the subproject was increased to accommodate the higher contingencies and standby financing, from US\$150 million to US\$251 million, required by the senior lenders to successfully complete the syndication of commercial debt.

1.7 Despite the higher financing requirements, the Hub Subproject continues to be competitive. The increase in its TKC cost since the ECO framework was approved, net of the standbys, contingencies and interest during construction, amounts to approximately 2% per annum. This increase was offset by shortening the construction period to reduce interest during construction and by improving, on the financial side, the matching of available currencies with the disbursements to reduce currency hedging costs. These measures have succeeded in minimizing the increase in tariffs, with the average tariff for the first ten years of US\$4.4/kWh.

In addition, the cost/KW of installed capacity based on the TKC price is about US\$762 which is among the lowest for thermal plants of its size and type currently under construction anywhere in the world.

1.8 The commercial banks consider their commitment under the ECO Guarantees and ECAs to represent the maximum exposure to commercial risk that they are prepared to assume. As a result, the increase in the financing requirements for the Hub is covered through a higher injection of equity from the sponsors and investors, and of subordinated debt to be provided by the Fund. The equity would be raised from US\$323 million to US\$372 million, and the subordinated debt would be increased by US\$221 million, from US\$381 million at the time the ECO was approved to US\$602 million. Of the US\$602 million, about US\$377 million would be provided under PSEDP I and US\$225 million would be provided under the proposed Project by the Bank (US\$115 million) and JEXIM (US\$110 million).

1.9 The extensive review and refinement by the international financial community of agreements and provisions pertaining to the Hub Power Subproject, referred to as the Security Package, has provided the basis for a tested and market approved structure for limited recourse financing of Build-Own-Operate (BOO) energy projects in Pakistan. This structure, with significant reduction in the support required through the Fund and GOP guarantees, is being adopted for use in financing other energy subprojects. The Port Qasim-Khalifa Point fuel oil pipeline (paras 4.10 - 4.12 and Annex 2) would be the next subproject to be financed by the Fund, through financing made available under the proposed Project. This support would be provided following appraisal by NDFC and the appraisal report is approved by the Bank and cofinanciers. A number of private power subprojects are either under implementation or are at an advanced stage of preparation (Table 4.1). In addition, the response of the international financial community to the Hub after the approval by GOP of its Security Package and tariff has stimulated the interest of other international power plants developers, and so far GOP has given preliminary approvals for proposals totalling 5000 MW. Most of these proposals are seeking support from the Fund in the form of subordinated debt that would cover between 10% to 30% of total costs. Proceeds under the proposed Project earmarked for new power subprojects would be allocated to those proposals that show evidence of firm commitment for equity and senior debt which together with the financing through the Fund would ensure financial close within 6 months of the effectiveness of the proposed Project.

## **II. THE ECONOMY AND THE ENERGY SECTOR**

### **A. The Economy**

2.1 In 1988, Pakistan embarked on a comprehensive economic reform program which contributed to strong growth in GDP and exports, and increased domestic and foreign investment. Successive governments have maintained their commitment to the reform program by implementing measures to improve the enabling environment for the private sector, liberalizing the external trade and payments system, lowering import tariffs and reducing restrictions on foreign and domestic investment, including residents' holdings of foreign currency. In parallel, measures were taken to deregulate the financial sector, decontrol financial intermediation and move towards indirect control of the monetary sector. An economy wide

privatization program was launched, and activities such as power generation, banking and domestic aviation that historically had been reserved for public sector were opened to private sector. Despite these achievements, however, fiscal performance was weak: the budget deficit placed a heavy burden on monetary policy and inflation remained at an annual average rate of 10%.

2.2 The newly elected government that took office in October 1993, is continuing the reforms initiated by its predecessors, placing special emphasis on fiscal adjustment, the broadening of structural reforms, and improving basic social services. Measures to restore fiscal balance include: tax reform, containment of nonproductive expenditures, and increased allocations to basic social services and infrastructure. Fiscal adjustment, consistent with greater reliance on private sector-led growth, is expected to contribute to more effective monetary policy. The government has strengthened the structural reform significantly by adopting a three-year trade policy reform program which will further reduce tariff rates and trade restrictions, and liberalize the exchange regime. These measures, together with appropriate exchange rate policy, aim at improving the economy's efficiency and international competitiveness. To address Pakistan's serious shortfalls in basic social services, the government is also implementing a comprehensive Social Action Program (SAP) which would increase the share of resources allocated to basic education, health, family planning and rural water supply. It would also improve effectiveness, quality and coverage of social services, and promote the participation of local communities, the private sector and non-governmental organizations in the provision of social services. The Bank is supporting this program with the Social Action Program Project (Cr. 2593-PAK) which was approved by the Board in March 1994.

2.3 Pakistan's economic performance has shown a marked improvement in the first three quarters of FY94. Progress is being made in reducing the budget deficit, and gross external reserves have increased markedly. These results are all the more remarkable as they occur in a more difficult macroeconomic environment than anticipated, due primarily to continued infestation by a cotton virus and a drought. As a result, GDP growth in the current fiscal year is expected to be 5%, compared to the target of 7.5%. These adverse exogenous factors are also expected to affect the current account balance of payments, the government's budget deficit and the rate of inflation. However, macroeconomic management has remained strong, allowing the government to meet the March 1994 performance criteria for the ongoing International Monetary Fund (IMF) program.

2.4 Implementation of the structural reforms has also been satisfactory. In February 1994, the National Assembly approved the extension of the wealth tax to agriculture and legislated increased autonomy of the Central Bank, both important measures for the successful implementation of fiscal and monetary policies agreed with the Bank and the IMF. As regards privatization, the new government is putting greater emphasis on ensuring the transparency of the privatization process and accelerating its pace of implementation. It has begun re-bidding the remaining 34 units on the original list of 103 industrial units, and is preparing two of the remaining public banks for privatization. It is also proceeding with privatization of the Water and Power Development Authority (WAPDA), the Karachi Electric Supply Company (KESC), and the Pakistan Telecommunications Company (PTC). The new government has also shown strong commitment to improving Pakistan's social services through the SAP. Important policy decisions such as hiring primary school teachers and permitting co-education, have been taken, although budgeted increases in sectoral expenditures still need to be disbursed.

## **B. The Energy Sector**

2.5 The development of the energy sector in the past was constrained because: (a) the maintenance of energy prices at levels well below their equivalent border prices or costs of production which failed to provide adequate internally-generated funds to finance investments; (b) absence of a regulatory framework needed to provide the parameters for the operation and management of all enterprises, public and private; and (c) inadequacy of project implementation capabilities and operational inefficiency on the part of public sector enterprises.

2.6 In an effort to address these issues and set the sector on its growth path, GOP, with the assistance of the Bank, formulated in 1985 the Long-Term Energy Strategy (LES), covering the period 1986-2010. LES provided the broad objective for the sector, which is to meet demand forecast for energy at least cost, while reducing the extent of dependence on imports. These were to be achieved by accelerating the development of energy resources; improving the efficiency of energy consumption, transport and delivery; providing full autonomy to the energy enterprises to allow them flexibility in deploying the resources and generating the surpluses needed for financing the future development of the sector; and moving gradually towards greater reliance on the private sector for mobilizing additional financial resources, and harnessing its technical and managerial expertise. The Bank supported the implementation of the first seven years of LES through two Energy Sector Loans, ESL I (Ln. 2552-PAK) in 1985 and ESL II (Ln. 3107-PAK) in 1989, and several investment loans.

2.7 Under these operations, reforms have been implemented, and progress has been made in addressing each of the major issues. In particular, some of the main institutions in the sector have been restructured, energy pricing reforms have been implemented, and the financial performance of the sector has considerably improved. In addition, GOP has introduced, with the assistance of the Bank, a program to increase the role of private sector in power generation. Implementation of this strategy was initiated in FY89 under PSEDP I, the details of which are presented in Chapter 3.

2.8 Despite GOP's effort to reform the sector, the pace of their implementation has been relatively slow. As a result, energy supply shortages continue. Load-shedding reached about 21% of peak demand for electricity in FY92. Severe shortages of gas led to frequent and prolonged supply interruptions. Recognizing the urgent need for major changes, GOP decided to pursue more aggressive policies for privatization and deregulation. This culminated with the announcement in March 1994, of a comprehensive energy policy (para 2.29). The policy calls for greater reliance on market forces and private sector involvement within a streamlined institutional and regulatory framework in the sector. Particular emphasis is placed on improving the efficiency of the sector through the implementation of more aggressive demand-side management measures, loss reduction programs and the establishment of targets for increasing the operational efficiency of enterprises.

### **The Bank's Assistance Strategy in the Energy Sector**

2.9 The Bank's strategy is to support these actions through a series of lending operations. The proposed Project, which is consistent with the Country Assistance Strategy discussed with the Executive Directors on March 31, 1994, would continue the support to private sector power generation under limited recourse financing. It complements the Power Sector Development Project (Ln. 3764-PAK), approved in June 1994 by the Board, which would

support WAPDA's restructuring and privatization program, and set in place a deregulated market where public and private sector enterprises would compete in the supply and distribution of electricity.

2.10 The Bank's assistance strategy is geared to supporting recently approved policies for petroleum and power (para 2.29). Lending would be aimed at: improving economic efficiency and financial autonomy in the sector by encouraging least-cost planning and tariffs that provide acceptable levels of self-financing; ensuring compliance with international environmental standards; and strengthening local capabilities for implementation. Key investments to increase domestic energy resources and to implement reforms would be supported. In line with the government's strategy for opening the sector to private investments, more recent lending has focussed on supporting the government's privatization program. The Bank's future lending program will further develop and enhance the participation of private sector. Accordingly, in the petroleum sector a future operation will support the privatization of OGDC, and the development and implementation by the private sector of a hydrocracker project, to increase production of high-value petroleum products. In the power sector, the recently approved Power Sector Development Project (Ln. 3764-PAK) is expected to accelerate the privatization of WAPDA, and the proposed Project would replenish the Private Sector Energy Development Fund to extend subordinated loans to private energy development subprojects.

### **Institutional Setting**

2.11 The responsibility for the energy sector is shared by four ministries: the Ministry of Petroleum and Natural Resources (MPNR), the Ministry of Planning and Development, the Ministry of Water and Power (MWP), and the Ministry of Production (MOP). A high-level Cabinet Committee on Energy (CCE), chaired by the Prime Minister, is responsible for the review and approval of all plans, policies and projects in the energy sector, while the implementation of the approved projects is under the control of the respective ministries and entities. An Energy Review Group provides coordination among the entities and ministries and monitors the progress of ongoing projects, programs, policy actions and issues. In addition, the Environment and Urban Affairs Division (EUAD) in the Ministry of Housing and Works is responsible for formulating and monitoring the implementation of GOP's environmental policies, including those for the energy sector.

2.12 The management of day-to-day operations in the energy sector is vested in a number of public and private sector entities. The public sector entities are: (a) 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; (b) the Oil and Gas Development Corporation (OGDC) for exploration and development of oil and gas; (c) the Pakistan Mineral Development Corporation (PMDC), for the exploration and development of mineral resources; and (d) the State Petroleum Refining and Petrochemical Corporation which owns the National Refinery Limited (NRL), for processing crude oil.

2.13 Also involved in the energy sector are a number of semi-autonomous entities in which GOP has a controlling interest either directly or through public institutions. These are: (a) KESC, which is responsible for the construction, operation and maintenance of power generation, transmission and distribution facilities in the Karachi area; (b) Sui Northern Gas Pipeline Limited (SNGPL) and Sui Southern Gas Corporation (SSGC) which are responsible for



the transmission and distribution of natural gas; and (c) Pakistan State Oil Limited (PSO) which is responsible for marketing and distribution of petroleum products.

2.14 Private sector entities include a large number of Pakistani coal mining companies, two refineries and five oil and gas development companies. All public and semi-autonomous operating entities are under the jurisdiction of MPNR, except WAPDA, KESC, NRL and Pakistan Refineries Limited (PRL). MWP has jurisdiction over WAPDA and KESC, and MOP over NRL and PRL.

### **Energy Resource Endowment**

2.15 Pakistan's commercially exploitable energy resources consist of hydropower, natural gas, oil and coal. In addition, the country has a large base of traditional fuels in the form of fuel wood and agricultural and animal waste, which provide a major share of rural consumers' energy needs. Given its favorable geographical location, Pakistan enjoys a high level of insolation.

2.16 The hydropower potential in Pakistan is estimated at about 27,000 MW under average hydrological conditions. As of June 1994, only 4,825 MW (18%) of this capacity had been developed or committed. A large number of medium and large sized hydroelectric sites have been studied to varying levels of analyses. Detailed engineering studies have been completed for two major hydro projects, Ghazi Barotha (1,400 MW) and Kalabagh (3,600 MW). Also steps are being taken to initiate the feasibility study for the Basha hydro project (3,300 MW).

2.17 Current estimates of remaining recoverable reserves of oil amount to about 27.3 million tons. Pakistan's major oil fields (Dhulian, Balkassar and Meyal) have largely been exploited, with production having increased from 39,300 BOPD in FY86 to about 60,000 BOPD in FY93, resulting in a reserves to production ratio of only nine years. The 1994 Petroleum Policy is designed with a view to improving the incentives for exploration and reversing the declining reserve/production ratio. The policy allowed for more expeditious procedures for awarding exploration licenses; the elimination of discount mechanism for producer price of oil; and the deferment of duties on imported equipment for activities ranging from exploration to production (para 2.29).

2.18 Pakistan has substantial gas reserves that have not been adequately exploited. Proven recoverable reserves of gas are estimated to be about 22.8 TCF including 1.8 TCF of associated gas reserves, of which 9.6 TCF were discovered during the last 5 years, mainly at the relatively large new fields at Qadirpur (3.9 TCF) and Kadanwari (1 TCF). Gas production has also increased from about 1.0 BCFD in FY86 to about 1.6 BCFD in FY93. Despite the recent discoveries, gas exploration has proceeded at a slower rate of development than the resources warrant, in part due to the generally limited interest by the oil industry in gas exploration under the prevailing incentive structure. The new Petroleum Policy, in addition to the above-mentioned reforms common for oil and gas exploration, modified the gas producer formula in favor of the producers mainly by eliminating the discretionary discount mechanism on the gas producer prices, decreasing government participation during the exploration and production phases, and reducing the income tax rate.

2.19 Domestic proven reserves of coal and lignite as of FY93 are estimated at about 734 million tons, of which 432 million tons are recoverable. In FY93, the production was only 3.3 million tons of which about 46,700 tons were used for power generation. Given the poor quality of domestic coal, and in order to increase its utilization in power generation, WAPDA has commissioned the development of coal at Lakhra to supply 150 MW (3x50 MW) of fluidised bed power plants which are currently under construction. Prospects for further development of coals are promising, given the preliminary results of ongoing exploratory activity financed by USAID, in the lower part of the Thar desert in Sindh Province.

2.20 Most of the renewable energy is obtained by direct burning of biomass, while the use of solar energy and biogas remains insignificant. Given that the household sector accounts for over 80% of the biomass consumption, and in face of the rapid increase of the population, greater pressure is expected on the already dwindling stock of forest resources. Reliable statistics on the use of renewable energy have been developed under the recently completed Household Energy Strategy Study (HESS) carried out by GOP in collaboration with Energy Strategy Management Assistance Program (ESMAP). The study is expected to provide the basis for an integrated program of assistance.

### Energy Demand and Supply

2.21 Pakistan's consumption of commercial energy for the period FY83-93 increased at an average annual rate of about 6.6%, from 11.1 million tons of oil equivalent (TOE) to 21.1 million TOE. This was due mainly to: (a) the growth of the economy at an annual rate of 5.7%; (b) increased access to commercial energy resources by the population and the underpricing of household energy during the first part of the decade; (c) increases in the energy intensity of the agriculture sector; and (d) rapid growth in the industrial sector. In FY93, the shares of commercial energy consumed in the main sectors of the economy were: 38.9% industrial, 33.0% transport, 18.5% residential, 3.9% agriculture, 3.8% other government entities and 2.9% commercial.

2.22 In terms of the shift in contribution of the various energy resources to the overall supply of energy during the period FY83-93, the share of gas dropped from 43.6% to 37.7%, principally due to supply constraints, and the share of oil and petroleum products increased from 34.1% to 40.2%. Despite the sharp increase in the domestic production of crude oil, its share remained at 8.5% of total energy supply. Imports of crude oil and petroleum products in FY93 accounted for over 30% of total energy supply. Of this, imports of petroleum products amounted to 49%. The share of hydroelectricity has remained constant during the period at about 15%. In order to meet the sharp increase in electricity consumption, thermal power generation increased at the average annual rate of 12.8%. This, in turn, resulted in a larger utilization of gas and petroleum products<sup>1/</sup>. The share of coal, although showing a slight increase, was lower than expected, given the fact that no new major users of coal have emerged. Table 2.1 summarizes the commercial energy supplies of the country.

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<sup>1/</sup> Thermal power generation has consumed about 7.1 million TOE of commercial fuels (mainly gas, fuel oil and high speed diesel (HSD)) in FY93 compared to about 2.5 million TOE in FY83.

2.23 **Energy Demand Forecast.** The forecast of unconstrained commercial energy demand, recently completed by the Bank with the collaboration of Energy Wing as part of the preparation of the Bank's Energy Options Study, calls for an average annual increase of about 6.7% up to FY2008. This forecast is conservative, as it assumes continued adjustment in energy prices and an aggressive demand management and conservation program. It assumes improvement in energy efficiency where the energy coefficient is expected to decrease from 1.1 for the period FY83-93 to 1.03 for FY93-2008. Investments required to meet the forecasted demand are within the policy framework agreed with GOP under the medium-term macroeconomic adjustment program (para 2.4).

2.24 **Energy Supply Forecast.** In order to meet the forecast demand at least cost, the supply of domestic energy is expected to increase, although its share of total energy supply is expected to decrease from 68% in FY93 to about 62% in FY2003. The contribution of hydropower to the overall supply would decline in relative terms even with the implementation of Ghazi Barotha. The share of oil and petroleum products is expected to rise from the present level of 31.7% to 44.1% of total energy supply by FY2003. This share could be reduced substantially by increasing the supply of gas through development of new gas fields and the pipeline infrastructure, and importing gas by pipeline. A study to determine the most economical options for increasing the supply of gas has been recently completed by ESMAP<sup>2/</sup>. The study concluded that the forecasted shortfall in gas supply could be met through increased domestic production in the short to medium term, and major gas imports in the longer term. In the absence of new domestic or imported gas, the share of gas would decline from 37.7% to as little as 24.2%. This shortfall would be made up through increased imports of petroleum products which would increase as a percentage of total energy supply from 31.7% in FY93 to 53.3% in FY2003.

### **Energy Prices**

2.25 Under ongoing operations, GOP has agreed to adjust domestic petroleum product prices to maintain their levels at import parity with border prices. **Producer prices** for domestic oil will continue to be pegged to international prices of crude, but under the PP, the discretionary discount applied by GOP on the full parity price has been eliminated to provide better and more consistent incentives for increased production. In order to attract risk capital for exploration, the producer price for natural gas, which was pegged to fuel oil prices, is now linked to a range of 67.5-77.5% of the international price of crude oil. The size of the discount is dependent on the complexity of the geology where exploration is to be undertaken. This eliminates the previous practice of pegging the price of domestic oil to the border price of fuel oil which have been decreasing because of softening demand due to environmental considerations. **Consumer prices** of petroleum products are above the corresponding import prices, adjusted for inland transportation and distribution margins. Consumer prices of natural gas were increased in August 1993, as a result of which gas prices for the general industry, cement, power and commercial sectors are close to parity with the domestic price of fuel oil. An exception is the fertilizer sector where gas is treated as feedstock rather than a source of energy, and prices are set lower, ranging between 20-35% of the domestic price of fuel oil, as gas. This subsidy to the fertilizer industry is a subject of an ongoing dialogue with the Bank. Gas used by fertilizer plants as a source of energy is priced at parity with the domestic price of fuel oil. GOP has recently completed under the ESL II (Ln. 3107-PAK) a comprehensive study

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<sup>2/</sup> Pakistan, Natural Gas Reserve Assessment and Imports Strategy, Green Cover Report, UNDP, March 1994.

**Table 2.1: COMMERCIAL ENERGY SUPPLIES FY83 - FY93**  
(Thousand TOE)

	FY83	(%)	FY88	(%)	FY93	(%)
<b>Gross Primary Energy Supply</b>	17,170	(100)	24,627	(100)	32,916	(100)
<b>Oil &amp; Petroleum Pr.</b>	5,855	(34.1)	9,560	(38.9)	13,211	(40.2)
Domestic Oil	550	(3.2)	2,094	(8.5)	2,800	(8.5)
Imported Oil	3,625	(21.1)	3,757	(15.3)	3,937	(12.0)
Imported Products	1,680	(9.8)	3,709	(15.1)	6,474	(19.7)
<b>Natural Gas</b>	7,486	(43.6)	9,231	(37.5)	12,411	(37.7)
<b>Coal</b>	1,062	(6.2)	1,791	(7.2)	2,116	(6.4)
Domestic Coal	720	(4.2)	1,230	(5.0)	1,462	(4.4)
Imported Coal	342	(2.0)	561	(2.2)	654	(2.0)
<b>Primary Electricity</b>	2,767	(16.1)	4,045	(16.4)	5,178	(15.7)
Hydro	2,713	(15.8)	3,984	(16.2)	5,039	(15.3)
Nuclear	54	(0.3)	61	(0.2)	139	(0.4)

Source: Hydrocarbon Development Institute of Pakistan

to determine the impact of higher gas prices on the ex-factory prices of fertilizer. The recommendations of the study are presently under review. Under ESL II and subsequently under the Public Sector Adjustment Loan (Ln.3645-PAK, also Cr. 2542-PAK), GOP agreed to raise gas prices for residential consumers to 80% of the border price of fuel oil by April 1994, 90% by September 1994, and 100% by April 1995. As these prices are now set at over 80% of the equivalent border price of fuel oil, only small increases would be required to comply with the above covenant. As for gas consumed by the power sector, tariffs for raw gas (low BTU content) are between 60-85% of the domestic fuel oil price, as a first step to achieving full parity by FY95, as agreed under ESL II.

### **Environment and Energy Conservation**

2.26 Responsibility for environmental protection in Pakistan is vested in the EUAD. The framework for the country's environmental protection was established in 1983 with the passage of the Pakistan Environmental Protection Ordinance. EUAD has prepared updated standards for protection against air and water pollution, and guidelines for environmental impact statements for energy-producing activities and has submitted these to the Pakistan Environment Protection Council for approval. The Ministry of Labor is developing improved health, safety and emergency management standards for surface and underground coal mining activities.

2.27 The government has recently approved a comprehensive National Conservation Strategy (NCS)<sup>3/</sup>, prepared with the assistance of the Canadian International Development Agency (CIDA), UNDP and the International Union for Conservation of Nature and Natural Resources (IUCNNR). NCS sets out the government's priority objectives and plans for promoting effective environmental and natural resource management. It proposes to achieve these objectives through a broad-based program which is directed towards encouraging greater public participation in development and environmental management, merging environment and economic decision making, and promoting durable improvements in the quality of life.

2.28 As regards energy conservation, the National Energy Conservation Center (ENERCON) has, in accordance with its mandate, initiated information and outreach programs for enhancing awareness about energy conservation prospects; assisted in policy formulation and planning; developed investment projects and proposals for the promotion of energy conservation activities; and implemented pilot programs aimed at demonstrating the viability and benefits of such activities. The major activities completed to date include: (a) a draft National Energy Conservation Law and a National Building Energy Code; (b) detailed energy audits for 59 large industrial plants which have identified possible average savings of 22%; (c) pilot tune-up programs for industrial boilers and automobiles, and retro-fitting of tubewells; and (d) training programs for private and public sector managers, engineers and technicians.

### Energy Strategy

2.29 The Prime Minister constituted in October 1993 a high-level Task Force on the Energy Sector, which included representatives from all main private and public sector companies operating in the energy, industrial and financial sectors. Its main objectives were to outline a new energy policy aimed at the elimination of load shedding; recommend a plan for mobilizing resources for the sector and promoting private sector investment; and enhance indigenous gas and oil production. The recommendations of the Task Force were submitted to the government in February 1994, and culminated in March 1994 with the announcement of a comprehensive Petroleum Policy and a Policy Framework and Package of Incentives for Private Sector Power Generation in Pakistan. The GOP has devised a multi-pronged strategy for the sector in the Eighth Five-Year Plan, consisting of:

- (a) restraining energy demand growth by introducing an aggressive demand side management program to control and regulate the growth of the unproductive component of demand, and discourage wasteful and expensive patterns of consumption;
- (b) reducing losses in the production, transportation and distribution of energy;
- (c) improving the operational efficiency of the main public sector enterprises;
- (d) increasing private sector participation in power generation and in oil and gas exploration and production activities by introducing an international-competitive policy package for attracting overseas and local private investments;

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<sup>3/</sup> Apart from CIDA and UNDP, a number of donors, including the Bank, have supported GOP's efforts to prepare and implement the NCS: the Bank through the proposed Environmental Protection and Resource Conservation Project; Asian Development Bank (ADB) through a technical assistance grant for strengthening the primary environmental institutions at the federal and provincial levels; and a number of bilateral donors through specific projects for improving watershed management, forestry development, and the introduction of professional training in environmental management at the university level.

- (e) accelerating the efficient development of domestic energy resources, and the infrastructure required for the transportation and distribution of energy;
- (f) streamlining the process of restructuring and privatizing the main public sector enterprises, in particular, PARCO, PSO, NRL, and OGDC, in conjunction with the ongoing privatization programs for SNGPL, SSGC and WAPDA; and
- (g) establishing a transparent regulatory framework to provide the necessary comfort to private investors. In addition, to encourage the implementation of co-generation projects, the policy advocates the introduction of an appropriate legislation, along the lines of the U.S. Public Utility Regulatory Policy Act (PURPA) of 1978.

2.30 In order to ensure adherence with implementation targets, the energy policy provides for the formulation of a monitoring program. Each ministry would be responsible for evaluating periodically the performance of the public sector enterprises against the announced targets. In particular, the monitoring function would emphasize reduction of losses, operational improvements, demand side management and adherence to the scheduled implementation of energy projects. In addition, a high level committee would be appointed to monitor progress in private sector participation, and propose modification to the package of incentives if necessary.

2.31 The level of investments in the power sector for the period FY94-98 is expected to be consistent with the targets and financial requirements for the public sector investment program. GOP's medium-term macroeconomic adjustment and structural reform program, which has been supported by the IMF and the Bank, envisages a level of public sector investment of around 7.5 % of GDP, consistent with the achievement of the fiscal deficit target. This would require high levels of public sector investment for the next few years as the privatization program of the energy sector will take time to fully materialize.

### **Power Subsector**

2.32 As of December 1993, WAPDA accounted for over 90% of the total installed hydro and thermal power generation capacity of about 10,000 MW, while supplying approximately 88% of the country's electricity consumption. The power systems of WAPDA and KESC are connected by a 220-kWh double circuit transmission line.

2.33 **The Power Market.** The electricity market has grown at a very rapid pace over the past two decades. Consumption of electricity increased from 6,097 GWh in FY73 to about 36,635 GWh in FY93, representing an average annual rate of growth of over 9.4%. Real GDP growth rate has been at an average annual rate of 5.7%, showing a coefficient of growth in electricity consumption to growth in GDP of 1.6. Over the years, the domestic sector has emerged as a major electricity consumer, accounting for 36% of total consumption in FY93, compared to 11.7% in FY73. The industrial sector whose share has declined from 50.1% in FY73 to 35.6% in FY93. During the same period, the agricultural and commercial sectors have decreased their share in the overall consumption. The growth of consumption by households was due to a five-fold increase in the number of connected households, equivalent to an average of over 380,000 new domestic connections per year. Despite this progress, only half of

Pakistan's population of about 121 million have access to electricity service, and the per capita electricity consumption (about 300 kWh/capita) remains low both in absolute terms and relative to other countries at a similar level of development<sup>4/</sup>.

2.34 The reliability of electricity supply, however, is not encouraging. Since the early 1980s the country has been experiencing wide-spread power shortages, principally due to insufficient power facilities (generation, secondary transmission and distribution systems), wide variations in hydro flows, and irrigation constraints. In FY92 power shortages reached a level of about 21% of peak demand and the overall impact of load shedding on the economy amounted to about US\$800 million. The proposed Project would assist in reducing the power supply/demand gap by attracting private sector investment for power generation.

2.35 **Demand-Side Management.** WAPDA, through its Energy and Load Management Cell, and in collaboration with ENERCON, is actively pursuing load management measures. They include non-operation of tubewells during peak hours, staggering of weekly holidays, voluntary 25% reduction of the load by continuous process industries and textile mills and stoppage of steel melting furnaces during peak hours. Under the ongoing Private Tubewell Development (Cr. 2004-PAK, 1989) and the Rural Electrification (Ln. 3148/Cr. 2078-PAK) projects, WAPDA is implementing a pilot program among 27,000 tubewells to control and restrict tubewell operations through ripple control, time switches and splitting and controlling residential and tubewell load in phases. In addition, WAPDA also has initiated the installation of time-of-day meters for 300 (plus a plan for additional 100 time-switches) of the largest industrial consumers to introduce peak/off peak pricing. With the assistance of ADB, a power factor improvement program has been initiated by ENERCON in collaboration with WAPDA. It has been estimated that these measures will lead to 81 MW of demand savings at customer level, and 50 MW at generation level. In addition, WAPDA conducts energy audit reviews in all sectors of the economy, with particular emphasis on the industrial sector.

2.36 The new energy policy calls for a more aggressive approach to demand-side management programs through: (a) extension of peak/off-peak pricing to the remaining industrial, large commercial and residential customers, and incentives for industrial consumers for shifting their consumption from peak to off-peak periods; restriction of supply for agricultural tubewells to off-peak periods (no supply during evening peak hours); (c) introduction of fiscal incentives to promote customer preference for energy-efficient fluorescent lamps vis-a-vis incandescent lamps; and (d) promoting the manufacture and use of energy efficient motors for tubewells, pumps and compressors. These measures, if successfully implemented, could reduce peak demand by some 1,000 MW by FY2002.

2.37 **Electricity Demand Forecast.** The forecast of demand for electricity through FY2018 was recently finalized by WAPDA. It was prepared by Acres International (Canada) and funded by CIDA. The forecast was reviewed by the Bank and found satisfactory. The introduction of load management, conservation measures and a gradual increase in tariffs towards economic costs have been taken into account in this forecast. As a result, demand for electricity is projected to increase at an average annual rate of 8.2% over the Eighth Plan period. Given the supply constraint experienced in recent years, load shedding is expected to continue for a number of years into the future until a number of major private power generation projects come on stream.

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<sup>4/</sup> In 1990, the average electricity consumption per capita for the Asia region as a whole, was about 1,235 Kwh.

2.38 **Electricity Tariffs.** Electricity tariffs are proposed by WAPDA and approved by the government. The current tariff structure classifies consumers under the following categories: domestic, commercial, industrial, agriculture, bulk consumers and others. Tariffs within each category are subdivided according to the level of consumption. Tariffs levied on industrial, some bulk and a small number of agricultural consumers are composed of two parts, a demand charge and an energy charge. These consumers also pay a Fuel Adjustment Surcharge (FAS), except those who are charged flat rate tariffs, varying from Ps. 7/kWh (US¢0.22/kWh) for the lower two levels of the domestic consumers to Ps. 75/kWh (US¢2.36/kWh) for other domestic, industrial, commercial, bulk supplies and other consumers. FAS is based on WAPDA's average fuel cost incurred in the twelve-month period ending two months prior to the month of billing, and allows it to recover at least 95% of its fuel cost. Other consumers pay a single tariff incorporating the two charges. Flat rates are paid by: (a) the majority of the agricultural consumers (based on the water pump horsepower level); and (b) domestic consumers in the Federally Administered Tribal Areas (FATA).

2.39 Since 1985, electricity tariffs have been increased annually to enable WAPDA to finance 40% of its investment from internal sources<sup>5/</sup>. As a result, the average revenue has increased from Ps. 63.8/kWh (US¢2/kWh) in FY85 to Ps. 144.7/kWh<sup>6/</sup> (US¢4.52/kWh) in FY94, representing an average annual increase of about 2% in real terms. The average revenue is now at about 75% of the Long Run Marginal Cost (LRMC) which is estimated at about US¢6/kWh. The government has taken steps to gradually eliminate the cross-subsidies in its tariff structure. During the last tariff increase in August 1993, tariffs were raised for all consumer categories by Ps. 25/kWh, thus increasing the tariffs of domestic and agricultural consumers by a greater percentage than for other consumer categories. Domestic tariffs were raised by 25% compared to the average increase of 20%, while overall agricultural tariffs were raised by 21%. Furthermore, subsidies for consumer connection for agriculture have been gradually reduced from Rs. 30,000 per connection in FY88 to zero in FY94. However, domestic and agricultural tariffs continue to be below their cost of supply. Table 2.2 below gives a summary of the current level of tariffs compared to their estimated economic level.

2.40 As indicated by a Tariff Study completed in 1991 by WAPDA with the assistance of consultants financed by ADB, there is still a need for further refinement to the tariff structure. Measures are expected to be introduced under ongoing agreements between GOP and ADB to rationalize the structure of electricity tariffs. These include: (a) a time-of-day tariff for WAPDA's industrial consumers with maximum demand in excess of 40 kWh; and (b) a gradual increase in the FAS on domestic consumption between 150 and 300 kWh per month. WAPDA has also agreed under the Power Sector Development Loan to include a metered energy charge component in all flat tariffs charged for tubewells, starting September 30, 1995.

2.41 Finally, in line with its objective to privatize the power sector, GOP has recognized the need to revise electricity tariffs to ensure that their levels would provide rates of return that would attract private investments. Accordingly, under the Power Sector Development Project, a study will be carried out to develop proposals and an action plan to improve electricity tariffs

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<sup>5/</sup> The 40% internal cash generation level is considerably above the average level of 12% achieved by power utilities in 1991 in a large number of developing countries recently reviewed by the Bank.

<sup>6/</sup> In addition, consumers paid a surcharge of 10.4% collected by WAPDA on behalf of the Government for payment of hydro-electric profits.



**Table 2.2: SUMMARY OF WAPDA'S CURRENT TARIFFS AND LRMC ESTIMATES**

Category	Percentage of total consumption	Average Rate Rs./kWh	LRMC Rs./kWh	Tariff as Percentage of LRMC
Residential	34.9%	0.922		47%
Commercial	4.3%	3.330		168%
Tubewells	19.3%	0.598 > average:	1.977	30%
Industrial LV	16.6%	2.370		120%
Bulk Supply LV	1.3%	1.925		97%
Others	0.9%	2.366		120%
Industrial MV	18.6%	1.948 > average:	1.892	103%
Bulk Supply MV	4.1%	1.788		95%
Weighted Average	100.0%	1.447	1.958	74%

LV = Low Voltage; MV = Medium Voltage

Source: WAPDA and mission estimate.

in terms of their ability to provide competitive and attractive returns to private investors. The recommendation of the study would be implemented by September 1996<sup>7/</sup>. GOP also intends to continue its effort to reduce the cross-subsidies in connection with future tariff increases required to meet the internal cash generation (ICG) covenant.

### **C. Bank Group's Role in the Energy Sector And Experience with Past Lending**

2.42 The Bank Group's involvement in Pakistan's energy sector started in 1955, with a loan to KESC for the construction of a thermal power station. Since then, it has assisted in the implementation of projects in all energy subsectors. Prior to 1985, the Bank Group had made 16 loans/credits to Pakistan for energy projects. In the power subsector, the Bank had participated in the Indus Basin Development Projects, and provided a series of four credits/loans to KESC and three to WAPDA. In the petroleum subsector, the Bank's involvement included five loans to SNGPL for the expansion of the infrastructure for the transmission and distribution of gas, three to OGDC for exploration and development of oil and gas and the Refinery Engineering and Energy Efficiency Project (Ln. 2218-PAK, 1982) for restructuring product output and streamlining existing system. All of these projects have been completed, and the respective PCRs issued.

2.43 In 1985, the Bank's strategy for supporting the sector was broadened to address the sectoral policies in addition to investments. The new emphasis on sectoral policies was intended

<sup>7/</sup> Given the decentralization of the power sector envisaged by the Strategic Plan, the study will also develop transfer pricing principles for exchange of electricity at the wholesale level between generation and transmission, and transmission and distribution, which can be effectively regulated.

to address the issues that cut across the energy sector, i.e., power, coal, oil and gas, etc. to ensure that consistency in policies is maintained throughout the sector. In addition, the sectoral policies launched a broad program for structural reform in the sector with the principal objectives being to identify the key investments needed to meet the energy needs of the economy; remove the distortions in energy prices and promote efficient use of energy; strengthen the institutions in the sector to move them towards financial and administrative autonomy; and deregulate the sector and create an enabling environment for private sector to assume a greater role in the production and delivery of energy. Two Energy Sector Loans were then made (ESL I and ESL II) that provided an overall policy framework for Bank's lending in the energy sector.

2.44 In addition to the above mentioned Energy Sector Loans, the Bank has made eleven loans in the energy sector since 1985. These include WAPDA IV and V (Ln.s 2499-PAK and 2556-PAK) for the least-cost expansion and reinforcement of the secondary and high voltage transmission grid; the Petroleum Resource Joint Venture Project (Ln. 2553-PAK) to assist GOP in mobilizing private sector involvement in exploration and development of oil and gas; the Kot-Addu Combined-Cycle Power Project (Ln. 2698-PAK) to add another 250 MW of generating capacity through the conversion of combustion turbines to combined-cycle operation; the Power Plant Efficiency Improvement Project (Ln. 2792-PAK) for the rehabilitation of existing power plants and conversion of combustion turbines to combined-cycle operation at Kotri and Faisalabad; the Refinery Energy Conservation and Modernization Project (Ln. 2842-PAK) for improving energy efficiency at the National Refinery Ltd.; the Private Sector Energy Development Project (Ln. 2982-PAK), the first of its kind to be approved by the Bank, and which provides for a fund to assist financing energy projects in the private sector; the Transmission Extension and Reinforcement Project (Ln. 3147-PAK) to extend WAPDA's transmission grid; the Rural Electrification Project (Ln. 3148-PAK/Credit 2078-PAK) which is the first Bank's operation to support the extension of the distribution network in rural areas; and the Corporate Restructuring and System Expansion Project (Ln. 3252-PAK) which provides for the privatization of SNGPL as well as expansion in its infrastructure. The most recent Bank operation in the sector is the Domestic Energy Resources Development Project (Ln. 3500-PAK), signed on October 1, 1992, which supports the development of the country's oil and gas resources.

2.45 Overall, the Bank has provided ten credits/loans to WAPDA. The first six have been completed and the remaining three are being implemented satisfactorily. The Project Performance Audit Report (PPAR) and the Project Completion Report (PCR) for the Third Power Project (Ln. 968-PAK and SAC 39-PAK) were distributed to the Executive Directors in April 1989. The PPAR concluded that the project not only improved the supply of electricity, but also all aspects of WAPDA's operations including administration, technical and financial. However, despite these achievements, the Project was completed three years behind schedule because of delays in the appointment of consultants, the award of contracts and clearance of Project Concept (PC1) documents, as well as the periodic scarcity of local funds. Similar delays were also experienced in the two previous projects. In order to minimize delays in start-up, the Bank, under subsequent operations, has assisted WAPDA in preparing standard bidding documents and has provided training to its staff in the Bank's procurement procedures. Moreover, through the sectoral approach to lending, which was initiated under ESL I, and continued under ESL II, the Bank has also been able to assist in mobilizing resources and reducing slippage in project implementation.

2.46 The Power Sector Development Project, (PSDP) which was approved by the Board in June 1994, was the first to support the implementation of a comprehensive strategy for the privatization of the power subsector in Pakistan. Due to the medium and long-term nature of the proposed privatization program for WAPDA, and the chronic shortages of electricity supply, the Bank through PSDP, would assist WAPDA in financing a time-slice of its interim investment needs. Under the proposed Project, the Bank will support the construction of privately owned and operated power generation plants and related fuel transporting and handling facilities, thus assisting in the implementation of the government's program for the privatization of the power sector.

### **III. POLICIES AND INSTITUTIONS SUPPORTING PRIVATE INVESTMENT IN THE ENERGY SECTOR**

3.1 As discussed earlier (para 2.2), GOP's macroeconomic reform program calls for the rationalization of public sector expenditures and the allocation of relatively higher proportion of available resources to social sectors. It also promotes a greater role for private sector in the revenue earning sectors of the economy. The objectives for increasing private investments are to: (a) supplement public sector investments which are being curtailed to reduce the fiscal deficit; (b) mobilize additional resources in the form of equity and debt financing, secured under minimum guarantees; (c) improve the overall efficiency of the sector by tapping the private sectors's proven and market tested technical and managerial capabilities in project design, finance, implementation and operation; and (d) create an environment which fosters competition and promotes efficiency in both private and public enterprises.

3.2 GOP, with the assistance of the Bank and consultants financed by USAID, identified the constraints to a greater role for private sector in energy. In 1988, a program was put in place with a set of measures that consisted of: (a) policies for the promotion of private sector investment in energy; (b) creation of a vehicle to provide long-term financing for private energy projects; and (c) establishment of new institutions for the evaluation, negotiation and approval of private energy investment. PSEDP I was designed to support the implementation of these measures.

#### **A. Policies for Promotion of Private Investment in Energy**

3.3 In the four years of negotiating the Hub Subproject, GOP recognized the need to strengthen and fine-tune the measures put in place in 1988 for the promotion of private energy to take into account the feed-back received from private investors and the international financial community. Refinement was also needed to make Pakistan internationally competitive in attracting financial resources, and to integrate in these measures the actions taken by governments to deregulate the economy, and increased reliance on the private sector. The Task Force on Energy recommended in February 1994, a new policy for private energy which integrated all the measures, amendments and refinements introduced since 1988 under PSEDP I on an *ad hoc* basis in connection with the negotiations of the Security Package for the Hub. In addition, the new policy moved to market based pricing as a basis for negotiation and approving private power generation projects. The new policy is summarized below (para 3.5-3.19). It was promulgated in March 1994 and incorporates the original policies introduced in 1988 together with the amendments made since. GOP has agreed to closely monitor and evaluate the

experience of a new policy regarding private power generation, and will submit to the Bank its recommendations regarding further refinements in the policy not later than June 30, 1996. 6.1(a)).

3.4 The policies for the creation of an enabling environment for private sector involved four components: (a) criteria for the consideration of private projects by GOP; (b) fiscal and financial treatment of private energy projects; (c) incentives for investors and lenders; and (d) a structure for the agreements, provision and facilities needed to safeguard the interests of GOP, lenders and investors.

#### **Criteria for the Consideration of Private Project Proposals by GOP**

3.5 The criteria to be met by private investments are: (a) integrability: which requires private projects be consistent with the national least cost plans for the subsector involved i.e., power, gas, petroleum, etc. This would ensure that private and public investments are complementary in meeting future energy requirements; (b) competitiveness: stipulates that private projects be selected through a competitive process, measured in terms of prices for output being at or lower than the economic cost of supply or avoidable cost; (c) viability: requires that the proposed projects should have an internal economic rate of return equal to or greater than the opportunity cost of capital; and (d) limited recourse financing: specifies that commercial loans secured by project sponsors should be under limited recourse where investors and lenders assume project risks.

#### **Fiscal and Financial Treatment of Private Projects**

3.6 Taxes and Duties: Taxes, duties and import levies on equipment typically raise investment costs by 40%, and substantially increase the local cost financing requirements, particularly as infrastructure investments require long term maturities not available from local financial institutions. GOP has responded to these concerns by eliminating all taxes and duties on imports of equipment, machinery, materials and other items for oil and gas exploration and production, pipelines, refineries, liquified petroleum gas, compressed natural gas and energy conservation projects. Private power companies are also exempt from corporate income tax, customs duties, sales taxes, flood relief and other surcharges, and can register anywhere in Pakistan to minimize stamp duties and registration fees. Foreign lenders are now exempt from tax on interest income. The taxes and duties were removed for three reasons. The first is to put Pakistan on an equal footing with other countries competing for private capital for power generation, such as Malaysia, India, Philippines, etc. The second is to reduce the financing requirements, particularly local costs during the development phase of private power, which can overwhelm the limited resources available in the local financial market. The third is to ensure consistency in treatment relative to WAPDA and KESC, which are not required to pay corporate income tax and, hence, their cost of electricity supply would be lower than the cost of privately supplied electricity if the latter is to pay corporate income tax, which would affect the dispatchability of private generating units.

3.7 There is also a justification for exempting private power companies from paying custom duties, surcharges and import tax during the development phases to reduce their claim on the limited financing capabilities of the local capital and credit markets. However, if the same levies are rolled over and capitalized at appropriate interest rates, and then paid as a part of the capital cost component of the tariffs, their impact on the tariffs would be relatively

insignificant. This approach to recovering the taxes would have the beneficiaries, namely electricity consumers, bear the burden of the taxes. As for corporate income taxes, there is merit for exempting private power companies if WAPDA and KESC are exempt from paying these taxes to ensure competitiveness in terms of pricing between public and private sectors. The essential question, however, is whether energy companies should be exempt in light of the need for GOP to broaden its tax base and institute a consistent tax policy. Since the new energy policy has just been introduced, and given the fact that the process for the privatization of WAPDA and KESC is about to be launched, changes in the income tax policies concerning the power sector could undermine investor confidence. It is, therefore, prudent to postpone the issue of corporate income tax for the power sector for another year or two until the ongoing privatization and private power programs are set on their course, and to examine the issue in the context of reviewing with GOP future measures for tax reform and resource mobilization. GOP has agreed to review as part of its assessment of the overall policy regarding private energy generation the exemption of the power sector from corporate income tax and the potential for rolling over and capitalizing customs duties, Iqra and import taxes, and recovering these from the private enterprises in the energy and energy related infrastructure during the operating phases (para 6.1 (b)). GOP has also confirmed that all taxes, duties and levies should they be imposed in the future on private energy and energy related infrastructure companies, would be treated as pass through items to be reflected in the tariff and collected from consumers of electricity (para 6.1 (c)).

3.8 Avoidable Costs and Indexation: Prior to the introduction of the new policy, the procedures for approving private power investments involved the negotiation of a bulk tariff for each project, requiring a detailed determination of: (a) the competitiveness of capital costs, (b) the efficiency criteria to be used in constructing and operating the facilities; and (c) a rate of return (IRR) to investors of 18%, assuming a 60% load factor. This led to a long process of negotiations. The new policy shifted the approach from a rate of return to a market-based pricing where the avoidable cost for the power system is set *a priori* and the decision is left to investors to select the equipment for power generation, structure of financing and its sources, and the operating criteria that together would maximize their returns. GOP would now evaluate investments for technical viability, letting the sponsors decide whether the avoidable cost tariff offered yields their required return. The average avoidable cost for the first ten years of operation has been set at US¢6.5/kWh plus a premium of US¢0.25/kWh for plants above 100 MW that are commissioned by the end of 1997.

3.9 The reliance of GOP on the avoidable cost as the main criterion for approving private power generation projects represents a major step in streamlining the process for review, negotiation, and approving private power. The estimated level for the avoidable cost of US¢6.5 cents is reasonable though not quite as competitive with rates awarded to private power projects approved in Malaysia, Philippines and India. The tariffs awarded to private power projects in these countries are relatively higher and involve no convertability risks. In the Philippines tariffs are paid in US dollars, and in India the Central Bank guarantees convertability of local currency for debt service and returns on equity. In Malaysia, the currency is fully convertible and foreign exchange reserves are at levels that pose no convertability risks. In Pakistan, the tariff of US ¢6.5/kWh would be paid in Rupees and now that the foreign exchange insurance scheme has been cancelled, lenders as well as investors would need to rely on a set of indices to adjust all components of the tariff to ensure that the erosion in the value of the Rupee is compensated for in the tariff to generate the Rupees required to service the debt and provide the returns on equity. Lenders and investors in power projects in Pakistan would still bear convertability risks.

3.10 The announcement of an avoidable cost for power of US\$6.5/kWh is based on the assumption of fixed interest rates for debt, a cap on insurance, and a predetermined and fixed level for front end fees, commitment charges, and foreign exchange insurance premia. This approach to setting the tariff, while it went quite a distance in resolving the issue of approval, does not fully take into account the lessons learned from the negotiations of the Hub Power subproject. A review of the tariffs agreed with private power projects approved recently shows that the sponsors are concerned about the bankability of these tariffs, but are prepared to move forward for now, letting the commercial lenders raise the issue of tariffs later on. Lenders and investors need to be protected against risks that are beyond their control. Changes in interest rates, insurance premia, front end fees and commitment charges cannot be assumed by lenders unless the project companies secure larger standbys and financing for contingencies to cover increases in these costs. Furthermore, the avoidable cost is based on a fixed onlending rate from PSEDF of 14% and a financing of 40% of total cost which are now inconsistent with the changes for variable interest rates, not of foreign exchange insurance fee, and financing of upto 30% agreed under the proposed loan (paras 4.26 and 4.28). A more effective approach for structuring the avoidable cost is to set the parameters on which this cost is based, and treat any change, whether up or down, as a pass-through item to be adjusted at financial close for each private power project. Thereafter a set of indices should be agreed upon which would automatically adjust the benchmark tariff fixed at financial close to compensate for changes in the tariff's components, without discouraging cost containment. Moreover, there is a need to examine the potential for providing incentives within the structure of the avoidable cost for increasing the level of utilization of power plants thus reducing the average tariff for sales to WAPDA and KESC. At the outset GOP has agreed to provide a statement clarification on how GOP's tariff policy for private sector is applied. Furthermore, GOP having set the benchmark tariff for the purchase of electricity at high voltage from the private power generators at the equivalent of US\$6.5/kWh inclusive of foreign exchange insurance premia has agreed to thereafter adjust every six months to reflect changes in the costs of commercial borrowing, foreign exchange risk cover, O&M and fuel. It will continue to provide an explicit outline of the indices to be used for adjusting the benchmark tariff of US\$6.5/kWh, the methodology used in deriving these indices, and the approach to be used for their application, and declare as part of its policy measures that the return on investment components of the tariff for private sector projects in energy and energy-related-infrastructure would be indexed annually to compensate for the depreciation of the Rupee relative to the US dollar. (paras 6.1 (d), 6.1 (e), and 6.1 (f)).

### Incentives to Investors and Lenders

3.11 Return to Investors: The new energy policy's base tariff of US\$6.5/kWh available to new power generators potentially offers competent operators attractive rates of return. Sponsors now have the incentives to minimize cost, thus maximizing their returns within the tariff offered by GOP for private power, as there is now no 18% cap on the investors' IRR. Returns are not guaranteed. Investors are expected to take the risk of lower or no return in the event their plants failed to operate as initially agreed. Foreign investors are assured full repatriation and rupee convertability of dividends, principal and expenses. GOP has confirmed its intentions to continue to allow full repatriation of dividends and principal capital by foreign investors, and compensate investors for loss of dividends, initial capital investments and capital appreciation in the event of default by public institutions in their obligations under the Security Package or in an event of political force majeure involving Pakistan (para 6.2(g)).

3.12 Debt Seniority: The Fund provides subordinate debt financing for private sector subprojects as a catalyst in attracting investors' equity and commercial loans. The rights of senior lenders vis-a-vis the Fund/LTCF in the event of liquidation was not clearly spelled out before the new policy was announced. GOP has declared loans from the Fund/LTCF to be subordinated to senior lenders' loans in both debt service and security (para 6.2(h)).

3.13 Debt Service Reserve Escrow Accounts: GOP will allow the creation of escrow accounts which may vary from one transaction to another to be funded either at the outset of the financing plan or from the revenues generated by the subproject companies after commercial operations (para 6.2(i)).

3.14 Financing of Energy Projects: The funding criteria agreed under PSEDP I have been fine-tuned as follows: (a) total costs includes the costs of goods and services and other provisions necessary to mobilize commercial financing under limited recourse; (b) the maximum debt: equity ratio for subproject companies would be 80:20, though higher equity ratios would be preferred; (c) the normal limit of its subordinate debt will be 30% of the overall costs, although in exceptional cases the Fund could finance up to 40% of the overall costs with special concurrence from the Bank; preference would be given to investments requiring minimum support from PSEDP; and (d) the commercial debt financing required under limited recourse should be at least 40% of the overall financing.

3.15 Financial Instruments for Private Energy: Restrictions on the ability of private energy companies to issue bonds and equity to local and foreign investors have been removed. The markets would determine how best lenders and investors should finance their projects. To facilitate the creation and encouragement of a corporate debt securities market to raise local financing, the following provisions have been made for energy companies: (a) permission to issue corporate bonds; (b) permission to issue discount shares at more than the current 10% limit stipulated by law, to enable venture capitalists to obtain higher rates of return commensurate to the risk and market conditions; (c) permission to foreign banks to underwrite the issue of power company shares and bonds; (d) permission for non-residents to purchase securities issued by Pakistanis without need for State Bank permission; and (e) abolition of the 5% limit on investment an energy company can have in the equity of an associated undertaking. The establishment of an independent bond rating agency to help investors make informed decisions has also been authorized.

3.16 Structure of the Security Package: Since GOP requires that private projects be implemented under limited recourse, lenders and investors would be entitled to guarantees from GOP only for specific risks which the private sector could not bear or where measures to mitigate these risks are beyond its means, i.e. political force majeure, sovereign default, etc. Outside these risks, lenders have to look to the projects themselves for recourse, namely to the revenues and assets of project companies. Access of lenders and investors to the revenues and assets of project companies are specified in a set of inter-related agreements that spell out the right and obligation of GOP, the project companies, lenders, investors, operators and shareholders. These agreements, together with the provisions to mitigate the various non-commercial risks, comprise the Security Package which also identifies risks associated with projects and allocates them accordingly to GOP, lenders and investors.

In order to accelerate the process of negotiations and approval of private energy investments, GOP has issued standardized Implementation, Fuel Supply and Power Purchase Agreements

which guarantee the obligations of government agencies and the public sector utilities under the Security Package. Protection against specific force majeure risks and changes in taxes and duties have also been incorporated into these agreements.

3.17 Energy Related Infrastructure Facilities: The new Petroleum and Power Policies have largely addressed the main impediments to private sector participation in the development of Pakistan's energy sector. These policies need supplementing to cover energy related infrastructure such as pipelines, port facilities and terminals, storage facilities for petroleum products, and power transmission as the translation of these policies into specific guidelines covering tariffs, fiscal treatment, incentives in terms of repatriation of dividend, etc., has not been addressed. Infrastructure facilities are similar to power generation in a number of aspects: (a) investments are characterized by long gestation periods; and (b) revenues are in local currencies and depend on a single customer rather than on a competitive market thus exposing private sector companies to currency conversion and availability risks, and sovereign risks. Failure to develop the infrastructure for handling, storing and transporting petroleum products, and transmitting electricity, would undermine the government's program for accelerating the involvement of the private sector in the energy sector. Moreover, successful power generation projects require efficient, reliable, and economic systems for the delivery of fuel. Success in attracting private sector to invest in infrastructure not only requires attractive returns on investment, but also a framework for setting tariffs and for extending the necessary protections against depreciation of the Rupee, inflation, availability of foreign exchange etc..

3.18 It is therefore proposed that energy related infrastructure, to be developed by private sector be treated on the lines already accorded to power generation investments. This would cover pricing principles, taxes, duties, indexation, foreign exchange availability, repatriation of dividends, etc. Of particular importance for equity and debt financing by the private sector development is the framework for setting tariffs under the pricing principles which are based on established commercial practices, covering: (a) principal and interest on foreign and local loans; (b) fixed and variable operation and management (O&M) costs; (c) insurance costs required by lenders and equity investors; (d) wages, salaries, benefits and mandatory social contributions; (e) project company development costs; (f) fuel cost, if the facilities require heating or cooling; and (g) a real and competitive return on equity.

In addition, in view of the fact that the tariff would be paid in Rupees whose value could depreciate relative to foreign currencies, there is a need for exchange rate indexation to compensate for erosion in the value of the Rupee. Also, loans secured on the basis of variable interest rates would need to reflect the interest rate component of tariffs. Finally, the return on investment components which would be paid in Rupees also would need to be adjusted annually to offset any depreciation or appreciation in the local currency to maintain the return in real terms. Announcement by GOP that it will extend the incentives and safeguards currently available to private power to energy related infrastructure facilities such as terminals, ports, pipelines, storage facilities and power transmission lines, is a condition for the effectiveness of the proposed Bank loan (para 6.3 (a)).



## B. Private Sector Energy Development Fund

3.19 The second set of the measures for the promotion of private energy involved the creation of a vehicle to provide long-term subordinated loan financing and to cover provisions such as escrow accounts and contingencies required for financing under limited recourse. Under PSEDP I, the Private Sector Energy Development Fund (the Fund) was created to mobilize financing from bilateral and multilateral institutions for onlending to private energy subprojects that meet the eligibility criteria and the Fund's guidelines. A total of US\$564 million was mobilized. Loans or mixed credits made to GOP from the Bank (US\$150 million), JEXIM (US\$150 million), Italy (US\$50 million), the United Kingdom (US\$44 million), and the Nordic Investment Bank (US\$13 million) totalled US\$407, and USAID committed a grant of US\$130 million. The Governments of France, Germany and Canada expressed interest in participating, provided that the subprojects originating in these countries were approved by GOP. Subsequently only the Government of France maintained its interest and provided US\$27 million for the Hub Power Subproject.

3.20 Since PSEDP I was approved, the development assistance priorities of a number of the cofinanciers have changed, altering the magnitude and cost of resources available to the Fund. USAID cancelled its grant of US\$130 million and replaced it with US\$7 million grant to be mixed with US\$13 million of commercial loans to be guaranteed by US Eximbank. The Overseas Development Administration (ODA) cancelled its contribution. The net effect of these changes was to decrease the Fund's resources by US\$163 million (29%) to \$399 million. Table 3.1 shows the initial and current commitments and their corresponding interest rates.

**Table 3.1: Status of Contributions to the fund Under PSEDP I**  
(US \$Million Equivalent)

Source	Initial Commitment	Initial Interest Rate (%)	Current Amount Committed	Current Interest Rate (%)
World Bank <sup>a/</sup>	150	- 7.72	150	7.43
JEXIM <sup>a/</sup>	150	5.80	150	5.80
Italy	50	1.50	50	1.50
U.K.	44	5.50	-	-
Nordic Investment Bank	13	5.00	-	-
USAID/	130	5.50	7 <sup>b/</sup>	
US Eximbank			13 <sup>b/</sup>	5.5
France	27	2.1	29 <sup>c/</sup>	5.8
<b>TOTAL:</b>	<b>564</b>	<b>5.64<sup>d/</sup></b>	<b>399</b>	<b>5.76<sup>d/</sup></b>

<sup>a/</sup> From PSEDP I, US\$5 million of the Bank loan was used for technical assistance.

<sup>b/</sup> Based on OECD guidelines. USAID grant (35%) plus US Eximbank loan (65%) based on 6 months LIBOR + 0.2%. Average rate of 5.5% as of September 1994.

<sup>c/</sup> To be disbursed in French Francs under mixed credit.

<sup>d/</sup> Average weighted interest rate.

3.21 The average interest rate of borrowing by GOP on the US\$399 million was about 5.6%. The onlending interest rate to subprojects was set at 14% in Rupees, fixed for the duration of the subloans. This interest reflected the prevailing rate in the financial market of

Pakistan at the time. It was to cover the cost of the funds to GOP plus the weighted cost of the foreign exchange insurance premium required at that time for all foreign loans. This cost was estimated to be about 3.8%. This brought the average cost of loans to the Fund to about 9.4%, leaving a spread of about 4.6% to cover the cost of administration of the Fund by NDFC. The onlending interest rate for these new loans was to be reviewed annually to re-align it with the market rates. In the last three years, reforms in the domestic financial sector have moved it closer towards market determined interest rates. Consequently, the basis for setting the Fund's onlending rate has been reconsidered to reflect the deregulated nature of the financial sector in which it operates. This issue is addressed under the proposed Project (paras 4.24, 4.56).

### **C. Institutional Framework**

3.22 The third set of measures for the promotion of private energy involved the creation of institutions for the review, negotiation and approval of private proposals. Under PSEDP I, MWP was assigned responsibility for reviewing and approving power proposals, and MPNR for reviewing oil/gas and coal development proposals. WAPDA was entrusted with the responsibility for negotiating and administering power purchase agreements and integrating the operation of private power plants within its system. Each of these agencies set up new units specifically charged with supporting private energy investments. MWP set up the Private Power Cell which became the Private Power Board, WAPDA the Private Power Organization, and NDFC the Private Energy Division. MPNR was to set up the Coal Mining Cell, but because of low interest in coal mining at the time, GOP decided, in agreement with the Bank, not to create this unit.

#### **Private Power and Infrastructure Board**

3.23 In 1988 MWP created the Private Power Cell to provide an institution that would evaluate and negotiate private power projects on behalf of GOP. It has been at full complement since 1993 with a Director General supported by a Director for Mechanical Services, assisted by two engineers, a Director for Finance with two Financial Analysts, and a System Analyst. Until May 1993, the Cell was supported by consultants from IRG of the USA, whose team of long and short term advisors were drawn from EBASCO for environmental services, ESI for plant operations, John T. Boyd for coal mining, and Hunton and Williams for legal services. This team provided technical assistance and training, developed guidelines for project evaluation, financial models for verifying private proposals, and established procedures for project evaluation. Core funding for staff, except for the Director General, the training and consultants was provided by a USAID grant which terminated on June 30, 1994. In an effort to streamline the institutional structure for private power, the new energy policy called for PPC to be designated as the Private Power and Infrastructure Board (PPIB) to function as a single-stop investment window and assume the full responsibility on behalf of GOP for negotiating all private sector power. PPC was so designated in June 1994, and funding for its operation, covering staffing, consulting services, training, and facilities and equipment would be covered under the proposed Project. Internationally respected consultants would be recruited under the proposed Project to assist the Board to detail its mandate, organizational structure, staffing, recruitment of key personnel, financial performance criteria, budget and auditing procedures and systems (para 4.5(b)).

### **The Fund at NDFC**

3.24 Under PSEDP I, NDFC was designated the Administrator of the Fund. In June 1988, NDFC created the Private Energy Division specifically for this purpose. It is structured to allow for its future detachment from NDFC. NDFC's management of the Fund is governed by an Administrative Agreement between the Corporation and GOP, signed in January 1989. It details the establishment and staffing of the Fund as well as NDFC's responsibilities for the preparation of guidelines for its operations, and the appraisal and supervision of subprojects approved.

3.25 A core staff was recruited and trained, and suitable consultants hired to support its operation in the early years. The Fund now has a competent staff of young professionals with extensive and specialized training abroad. Training and staff support has been well provided by internationally recruited consultants. The Fund is headed by a Senior Executive Vice President who reports directly to the Chairman of NDFC. Under the Senior Executive Vice President are two Senior Vice Presidents each heading a department of financial and technical experts. There is also a Vice President for Management Systems and Credit Lines. Operational support has been provided by a consulting team led by Price Waterhouse, with RCG/Hagler Bailly and Brown & Root as economic and technical advisors, and Latham and Watkins as legal advisors. These consultants have helped the Fund develop its institutional capability. Coopers and Lybrand (U.K.) developed the appraisal guidelines. Financing for technical assistance and training was provided by USAID grants, the technical assistance component under PSEDP I, and the Government of Japan. The operations manuals have been approved by NDFC, GOP and the Bank, and brochures describing the Fund's objectives and the guidelines for its lending policies have been published.

3.26 The Fund was set up as a self-contained unit. It is expected to reach its own independent decision as to the technical and financial viability of subprojects presented for financing, after they have been approved by the Private Power Cell of MWP. In this respect it undertakes for each subproject an assessment of the adequacy of each agreement under Security Package; the structure of the financing plan; implementation and construction contracting arrangements; the insurance arrangements; and cash generation. In addition, the Fund coordinates all of its activities during project implementation and future operation with the senior lenders. The Fund has successfully undertaken all of the pre-construction activities in connection with the appraisal of the Hub Power Subproject. Its appraisal report was reviewed by the Bank and found satisfactory, and suitable as a basis for the release of the mobilization payment to launch the implementation of the subproject (para 1.6). The decision on detaching the Fund from NDFC and establishing it as an independent financial institution, as agreed under PSEDP I, was postponed by GOP, with the concurrence of the Bank and cofinanciers, until the first subproject is launched. Now that the Hub Power Subproject is expected to reach financial closure by September/October 1994, the issue of detachment and its timetable implementation would be addressed under the proposed Project (para 4.52).

### **WAPDA Private Power Organization**

3.27 WAPDA created the Private Power Organization under a Managing Director, with a General Manager, four Directors and six Assistant Directors, and the support of IRG and Putnam, Hayes. USAID grant funds covered all operating costs, staff training, consultants contracts and the appointment of staff. The Organization's original function was to coordinate

all the WAPDA units involved in load dispatch, system operation, finance, system planning, etc., to handle the complex issues of negotiating tariffs and power purchase agreements, and outline contractual and technical aspects for the integration of private sector supplies into WAPDA's system. The new policy has phased the Organization out of this role (para 4.49), leaving these functions the sole responsibility of PPIB.

3.28 In 1993, WAPDA assigned its Private Power Organization the additional responsibility for planning the privatization of its assets, in accordance with GOP policy for the divestiture of its operating units (para 2.46). It therefore has a major role in the implementation of the recently approved Power Sector Development Project, particularly with regard to the reorganization and corporatization of WAPDA into a holding company with decentralized generation, transmission and distribution subsidiaries operating as discrete autonomous profit centers. The Organization has also developed guidelines for purchasing power from captive industrial plants and co-generation units, from which it is obliged to purchase power at rates set by the new policy.

### **Lessons from Previous Bank Operations**

3.29 The experiences gained so far from PSEDP I (Ln. 2982-PAK) and the processing of the ECO coguarantee for Hub can be summarized as follows: (a) the speed by which infrastructure projects can be successfully financed is largely country specific. In some countries the presence of the Bank and of ECAs does not necessarily mean that commercial lenders are willing to assume country and sovereign risks, unless the multilateral institutions are involved in mitigating certain sovereign risks; (b) the ECAs' willingness to guarantee commercial loans is tied to the size of the contract awarded and to the limit on exposure of the country involved, irrespective of how financially and economically attractive the projects are; (c) the availability of subordinated debt is useful and in some countries essential for mobilizing commercial debt, particularly for infrastructure projects whose revenues are denominated in local currencies and dependent on the performance of a small number of public enterprises and agencies; (d) the coordination of cofinancing for private projects is extremely time consuming, particularly in harmonizing procurement rules and disbursements of funds and in integrating the available currencies with those required for project implementation, implying the need for relatively few cofinanciers; (e) private power and infrastructure projects typically require numerous regulatory and procedural changes and it is essential to identify potential bottlenecks and constraints at an early stage; and (f) it is preferable to limit project size, to enable ready substitution if a key participant drops out; among other advantages, this permits the Bank and the borrower to take a more hands-off role. Nonetheless, experience to date on subsequent subprojects indicates that all parties have learned lessons that are resulting in much faster processing. This also indicates that investor confidence in Pakistan's power sector is growing as a result of Bank support, and that in the future private power would need proportionally less subordinated debt financing.

## **IV. THE PROJECT**

### **A. Project Setting**

4.1 The increased reliance of Pakistan on the private sector for energy development has been broadened to include a range of infrastructure facilities. The shift from public to the private sector reflects the policy makers' recognition that resources needed for the development

of infrastructure could not be financed through budgetary allocations. The preparation of the Hub provided Pakistan substantial expertise in structuring complex BOO projects financed under limited recourse. This provided the basis for GOP to apply the same principles for the development of infrastructure i.e., pipelines, terminals, airports, port facilities, bridges and toll roads. The constraint to greater involvement of private sector in infrastructure is principally the absence of enabling environments in terms of regulations, commercial codes, pricing, taxation, returns, etc. These are essential if the private sector is to assume the role envisaged by GOP. In addition, the institutions responsible for appraising, negotiating and financing private infrastructure projects need to be strengthened, their guidelines amended and their staff trained and increased to cope with the number of projects involved.

4.2 The Hub Power Subproject is Pakistan's flagship in terms of the development of internationally credible private power projects. Despite the support of every government that has taken office since 1988, the staying power of the sponsors and contractors, and the involvement of the Bank and major donors, financial closure for the subproject has been delayed by about four years. This has increased the financing required for the subproject, primarily to accommodate the adjustment in the TKC price, which was caused by the appreciation in the value of the Japanese Yen and the depreciation of the Pakistani Rupee, and inflation in Japan, France and Italy where the major share of equipment is being procured. In addition, the senior lenders have insisted on higher contingencies and standbys to buffer the subproject during the construction against foreign exchange risks, interest rate risks and cost overruns. The increase in the financing requirements of the subproject would be covered through higher equity and more debt financing from CDC, and from ECA guaranteed commercial loans. The rest, amounting to about US\$200 million, would have been provided by the banks under the ECO/JEXIM Guarantee. However, as financial close got delayed and costs increased, the banks were unprepared to assume the risks originally contemplated, and asked that the Fund increase its subordinated financing from US\$381 million, representing 26% of the overall financing for Hub, to US\$602 million, amounting to about 33%. Unless the level of support through subordinated debt is met by the Fund, financial close by the Hub would not be possible.

4.3 After PSEDP I was approved, a number of private power projects which were concurrent with the Hub either dropped out or slowed their pace of development as they waited the progress on Hub, which has been used as a vehicle to fine tune the legal framework, the Security Package, the tax structure and the foreign exchange insurance scheme to accommodate financing projects under limited recourse. The lessons learned through Hub have been incorporated in GOP's new energy policy announced in March 1994. The new policy together with the initiation of construction and the launching of the commercial debt syndication for Hub has stimulated the interest of the private sector. Seven proposals totalling 1970 MW involving major international developers and operators have been given preliminary approved by GOP. Some of these proposals require some financing from the Fund in the form of subordinated loans to attract senior commercial debt. The financing sought, however, is in many cases much lower than was required for the Hub, partly due to the higher tariffs offered and partly due to the investors' growing confidence resulting from the progress on Hub.

## **B. Project Objectives**

4.4 The objective of the proposed Project is to assist GOP increase the private sector's role in the development, ownership and operation of power and related infrastructure facilities by providing: (a) long term financing through the Private Sector Energy Development Fund (the

Fund), presently administered by the National Development Finance Corporation, for subprojects that are either under implementation or are shortly to be launched; and (b) strengthen the newly created institutions responsible for the review, negotiation, approval and financing of such private sector investments.

### **C. Project Description**

4.5 The proposed Project will:

- (a) replenish the Fund to provide subordinated long-term loans to private sector entities to finance goods, services, and associated costs required for the implementation of:
  - (i) the oil-fired Hub Power plant to be constructed, owned and operated by HUBCO (paras 4.6-4.9); and
  - (ii) the pipeline network for the transportation of fuel oil from Port Qasim to the existing and new power generation plants such as Hub Power, Ben Qasim (1,260 MW) and Fauji (350 MW Phase 1) at Point Khalifa. The pipeline network would be constructed, owned, and operated by APL (paras 4.10-4.12).
  - (iii) maintain financial resources in the Fund to provide subordinated long term loans to private power generation and energy related infrastructure subprojects currently at an advanced stage of preparation, provided each meets the guidelines of the Fund and the environmental standards of the Bank (para 4.13, and Table 4.1). Priority in accessing the Fund's resources financed under PSEDP I and the proposed Project for subprojects other than the Hub Power Subproject would be accorded to those that show evidence of completed equity and firm commitment for senior debt which together with the subordinated debt to be provided under the proposed Project will allow for financial close within at most 6 months from the effectiveness of the proposed Project;
- (b) fund the continued operation of the Private Power and Infrastructure Board, covering staff, consulting services, training, and facilities and equipment; and
- (c) provide consulting services to:
  - (i) assist GOP to outline the mandate for the PPIB, its management and reporting structure; staffing plan and compensation package; financing plan and financial performance indicators; environmental and resettlement capacity building plan and guidelines; and its monitoring, evaluating and reporting system;
  - (ii) formulate the mandate for the Fund to operate as an autonomous, commercially-oriented LTCF; its organizational structure and management; staffing plan and terms of reference for the various positions; financing plan and financial performance indicators and financial monitoring systems;
  - (iii) develop the guidelines for the Fund/LTCF to allow for its financing of energy related infrastructure subprojects, i.e., oil terminals, pipelines, transmission systems, refineries, etc; and strengthen the staff capabilities to deal with such investments; and
  - (iv) develop environmental and resettlement assessment guidelines for the Fund/LTCF, and strengthen its capabilities for monitoring compliance with these guidelines during the construction and operation phases.

Under the proposed Project all subprojects other than the Hub Power Subproject, which has been already appraised by the Fund and approved by the Bank, would require appraisal by the Fund/LTCF and Bank approval of the appraisal reports and subloan documents before disbursement.

### **Hub Power Project**

4.6 The Hub Power Subproject is comprised of 4x323 MW oil fired power generation steam units. It is Pakistan's first private sector BOO power project and when completed it would account for 12% of total installed capacity. It would be owned and operated by HUBCO, a joint stock company owned by Pakistani and foreign investors. Its shares would be traded in the international capital markets and the Karachi Stock Exchange. The power plant is being constructed under a fixed lump sum TKC by an international consortium led by Mitsui and Company of Japan, with IHI of Japan supplying the boilers, Ansaldo of Italy providing the turbogenerators and overall engineering, and Campenon Bernard of France executing the civil works. Xenel Industries of Saudi Arabia is the sponsor responsible for the development of the subproject and a major, together with National Power of the United Kingdom which is the plant operator. Other major investors on the Board come from Singapore, Saudi Arabia, East Asia, Europe and North America, and the rest of the equity comes through Global Deposit Receipts (GDRs) raised on the world markets.

4.7 The financing of the Subproject follows the guidelines of the Fund which require a minimum debt:equity ratio of 80:20. Debt would be divided into subordinated debt, which would be covered by the Fund, and senior debt, which would be provided by a syndicate of foreign commercial banks, Commonwealth Development Corporation (CDC) and a syndicate of local banks. The senior foreign debt, with the exception of the financing provided by CDC, would be guaranteed against sovereign risks and political event of force majeure by the Bank and JEXIM under the ECO Guarantee, and by guarantees of the export credit agencies of France (COFACE), Italy (SACE), and Japan (MITI-EAD).

4.8 The construction of the Hub started on December 12, 1993 when the first tranche of the mobilization payment was made (para 1.6). Progress in the construction is ahead of schedule by over three months. The first unit (1x323 MW) is expected to be commissioned by June 1996 at the latest, and the remaining three units would follow in sequence at three month intervals each.

4.9 Commitment for subordinated debt financing has been provided by the Bank, JEXIM and the Government of France, as well as by the Fund using its PSEDP I and other resources. Senior debt financing is being mobilized through a syndication led by Citibank, Bank of Tokyo, Credit Lyonnais, The Sakura Bank, Natwest and Mediocredito Centrale. The arranger banks have agreed with the Bank and Hubco on a strategy for syndicating the ECO/JEXIM facility and the ECAs facilities together as a package. Market sounding for US\$692 million equivalent was launched in August 1993. Financial institutions in Europe, Japan, North America and the Middle East were contacted. The syndication has been oversubscribed and the underwriting became unconditional on September 19, 1994. Names of the financial institutions and the amounts committed are presented in Schedule D to Annex 1.

4.10 Morgan Grenfell was appointed global coordinator for the outstanding equity amount and has assembled a syndicate of institutions to ensure a wide investment base. Deutsche Bank

fully and unconditionally underwrote the outstanding equity amount as of September 1994. HUBCO's shares have been offered in the form of Global Depository Receipts (GDRs), which are listed on the Luxembourg Stock Exchange. US\$30 million equivalent will also be offered to investors in Pakistan, where Hubco secured a listing on the Karachi Stock exchange. In order to overcome the current weaknesses in the absorptive capacity of the equity market in Pakistan, Morgan Grenfell pre-placed US\$25 million of equity with the Overseas Economic Cooperation Fund of Japan (OECF). OECF sub-underwrote the equity and will hold it during the construction period, then it will gradually divest itself of it. Small local investors can then acquire this equity. This would broaden the ownership base of the plant and provide local investors with the opportunity to hold equity. Details are presented in Annex 1.

### **APL Fuel Oil Pipeline**

4.11 Pakistan lacks an efficient petroleum products transportation infrastructure to transport fuel oil from the Karachi area to thermal power generating centers across the country. Currently, the dominant mode of fuel oil supply is trucking by road which entails substantial environmental risks, especially where trucking routes cross densely populated areas. Pipelines are the most efficient and reliable mode of transporting petroleum products, and establishing pipeline networks has become a priority for GOP, which has earmarked their development to the private sector. The highest priority is a pipeline connecting Port Qasim to the Hub Power Complex, Fauji Power Plant and Balochistan Power Plant, all located at or around Khalifa Point about 25 kms west of Karachi in the province of Balochistan.

4.12 The proposed pipeline would be 77 kms long and transverse in a northwestern direction from the private sector oil terminal at Port Qasim<sup>8/</sup>, which is on the eastern edge of Karachi, and circumvent the city to terminate at the site of the Hub Power Subproject. A special purpose company, Asia Petroleum Limited (APL), would be responsible for the design, financing, construction, commissioning, operation, maintenance and ownership of the pipeline under a limited recourse financing. APL's shareholders would include PSO, Asia Infrastructure Limited (AIL) of Singapore, VECO Engineers & Constructors of the USA, the Independent Petroleum Group (IPG) of Kuwait, CDC and the IFC<sup>9/</sup>. AIL, Veco and IPG have collectively entered into a joint venture agreement with a view to owning a controlling 51% interest in APL. PSO would subscribe for 30% of the equity, and the remaining 19% equity would be held by IFC, which will place 10% on the Karachi Stock Exchange through an Initial Public Offering (IPO) when the subproject is commissioned.

4.13 Basic design was undertaken by Fluor Daniel Williams Brothers of the USA acting as a subcontractor to Enar Petrotech of Pakistan (Enar) who are the overall design and engineering consultants. The consultants recommended that the pipeline be insulated, with a 14" diameter for a design capacity of 3.0 million tons per year. Required throughput from Port Qasim to both the Hub and Fauji power plants is expected to be 2.0 million tons per year, which corresponds to a pipeline utilization factor of 60%, leaving adequate capacity to serve the other planned power plants. Detailed engineering and specifications for equipment and materials has been undertaken by Enar which also conducted the initial right-of-way survey. The

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<sup>8/</sup> The terminal, which is under construction, will be owned and operated by FOTCO, a joint venture between the Fauji Foundation and major international investors.

<sup>9/</sup> IFC's participation is still to be confirmed.



environmental impact assessment was made by EBASCO of the USA under terms of reference approved by the Bank, which has reviewed and approved it. Promet Private Limited (Promet), a Malaysian/Singaporean engineering and contracting company with a proven track record in the process industries, would undertake the overall management and implementation of the subproject under a limited recourse financing structure where it would guarantee a fixed lump-sum turnkey contract and assume both the completion and performance risks. Promet has agreed with the Bank and NDFC to procure all goods and services, including construction works, under Bank procurement guidelines. Promet's shareholders are also major shareholders in the Hub Power Subproject and in AIL. Details are presented in Annex 2. The issuance of the consents, the clearance for the acquisition of the right-of-way, and approval of the Security Package of the APL subproject would be conditions of effectiveness for the proposed Loan (para 6.3 (e)). Disbursement for APL would not take place until NDFC appraises the subproject and the Bank approves the appraisal report.

### **Other Potential Energy Subprojects**

4.14 A number of power subprojects are currently at various stages of preparation, of which the larger ones are expected to seek financing from the Fund (Table 4.1). Standardizing the agreements under the Security Package and requiring firm commitments for equity and strong letters of support for debt financing would reduce the time needed for achieving early financial closures for these subprojects, as does the fact that levelized tariff for the first ten years for each of these subprojects, which is fixed by GOP at US¢6.5/kWh, plus US\$0.25/kWh of commissioned before December 31, 1997. Complicated negotiations on tariffs and rates of return, which initially encumbered the Hub Subproject, are no longer required, further streamlining the decision process.

4.15 Allocating the proposed project's uncommitted resources for other energy subprojects without earmark would foster competition among sponsors to accelerate the process of the securing debt and equity financing in order to have early access to the Fund's un-allocated resources. Priority in accessing these resources would be given to those subprojects which reach financial close within a year of the effectiveness of the proposed Project. This would guard against delays experienced with the Hub Power Subproject, and hence the subsequent slow pace of disbursements under PSEDP I.

4.16 Subprojects financed under the proposed loan would be appraised by the Fund and the appraisals approved by the Bank prior to disbursement. The subprojects would need to meet the technical, economic and financial criteria already agreed with the Bank under PSEDP 1, and the sponsors must undertake environmental impact assessments that would require Bank approval.

### **D. Project Cost and Financing Plan**

4.17 The estimated total cost of the Project is estimated to be about US\$2,388 million of which 11 million is for technical assistance and US\$2,377 million is for subprojects. A summary is presented in Table 4.2. The Hub Power Subproject would account for US\$1,832 million and the APL pipeline US\$100 million. The remaining US\$445 million would be for power subprojects which are currently at an advanced stage of negotiations. Technical assistance of US\$11 million would also be provided to cover consultancy services, training and equipment to the Fund/LTCF and PPIB, and equipment and materials for the PPIB. US\$6 million would

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**Table 4.1 STATUS OF OTHER SUBPROJECTS**  
(As of August 31, 1994)

	<b>UCH-1</b>	<b>Roush Power</b>	<b>Kabirwala</b>	<b>Habibullah</b>	<b>Power Gen</b>	<b>FEPCO</b>
Capacity (MW)	584	370	144	104	116	350
Technology	Combined Cycle	Combined Cycle	Combined Cycle	Combined Cycle	Gas turbine	Steam
Fuel	Gas (low btu)	Oil	Gas	Gas	Oil	Oil
LOI Issued	5/19/94	6/22/94	5/19/94	6/14/94	5/19/94	5/19/94
LOS Issued	6/22/94	8/8/94	6/30/94	7/17/94	6/27/94	6/28/96
Commission Date	12/31/96	12/31/96	9/30/97	1/1/97	9/20/95	12/1/97
ESSA	Completed	In Process	Completed	In Process	In Process	In Process
Cost (million)	660	510	175	109	80	481
Security Package	Finalized*	In Process	In Process	In Process	In Process	In Process

LOI = Letter of Intent

LOS = Letter of Support

ESSA = Environmental and Social Soundness Assessment

\* With the exception of one issue which is pending on the Gas Supply Agreement.

come as a loan from the proposed Project, US\$2 million from Japanese Government Trust Funds administered by the Bank, and US\$3 million from GOP. The proposed Bank loan to the Fund (US\$244 million), together with the loans from JEXIM (US\$110 million) and the Government of France (US\$10 million) would provide a total of US\$364 million to finance goods, works, consultants' services and financial costs as described in this report (paras 4.32-4.46). A certain amount of the Bank loan will be used to finance, via standby facilities, goods, works and related services provided by the sponsors and lenders. The rest of the financing would be provided by subordinated debt (US\$399 million) from PSEDP I, financed by the Bank and cofinanciers under Loan 2982-PAK; local and foreign equity (US\$519 million); senior foreign debt (US\$871 million); senior local debt (US\$140 million) and subproject revenues US\$57 million. While the figures for the Hub (US\$ 1,832 million) and APL (US\$100 million) are firm, those for other subprojects are illustrative. The distribution of these funds by subprojects is described below.

4.18 **Hub Power Subproject:** The proposed Project would provide subordinate debt financing of US\$114 million for the Hub Subproject to supplement US\$110 million being provided by JEXIM and US\$377 million under PSEDP I, which is also funded by the Bank Loan 2982-PAK and cofinanciers (Table 3.1 and paras 3.20, 3.21). The rest of the financing is arranged as follows: US\$372 million in equity, US\$802 million in senior foreign and local debt, and US\$57 million in revenues earned during construction. The total estimated costs for the Hub Subproject are US\$1,832 million.

4.19 **APL Pipeline Subproject:** The proposed Project would contribute US\$30 million in subordinate debt financing to the Asian Petroleum Limited (APL) for the implementation of this subproject. The total cost of this subproject is US\$100 million, of which US\$40 million is in equity and US\$30 million in senior foreign debt. The equity is being provided by PSO, Asia Infrastructure Limited (AIL) of Singapore, Independent Petroleum Group of Kuwait (IPG) of Kuwait, AFIC, (the private sector window of ADB), NDFC and VECO of the U.S.. The foreign debt is being provided by Asia Infrastructure Limited, IPG, IFC and NDFC.

4.20 **Other Energy Subprojects:** Because these subprojects are still under preparation, and no ready for final negotiations with the Fund, the figures presented here are preliminary and illustrative. It is envisaged that, given the Fund's commitments to Hub and APL subprojects, the proposed Project would contribute US\$100 million and cofinanciers US\$10 million in subordinate debt financing to power subprojects which are at an advanced stage of preparation. Another US\$22 million of subordinated debt would be provided under PSEDP I. Senior debt of about US\$179 million would be provided by foreign commercial banks, export credit agencies and local commercial banks, with the remaining US\$134 million to be provided in equity. The senior debt and equity estimates are preliminary figures to be adjusted at the time the subprojects reach financial close.

#### **E. Sources of Replenishment for the Private Sector Energy Development Fund**

4.21 The replenishment of the Fund would be financed through loans amounting to US\$364 million made to and guaranteed by GOP. The Bank would provide a loan of US\$250 million, of which US\$244 million would be for the replenishment of the Fund, JEXIM a loan of US\$110 million, and the Government of France a soft loan equivalent to US\$10 million. A summary of the terms for replenishing the Fund is presented in Table 4.3. The Fund would onlend the resources made available by these loans for private sector energy and related

infrastructure subprojects that meet its eligibility criteria (para 3.5). The Government of France and JEXIM have confirmed their intentions to provide US\$120 million in cofinancing with the Bank. In order to ensure that the funds needed for the replenishment of the Fund are available for timely disbursement for approved private sector subprojects, the signature of the loan agreements between GOP and the Government of France and JEXIM and the fulfillment of conditions precedent to their effectiveness is a condition for the effectiveness for the proposed Bank loan. (para 6.4(b)). The Bank is actively supporting GOP in its efforts to attract additional contributions to the Fund. Recently, the Governments of Korea and Germany have expressed interest in participating as cofinanciers of the Fund. The documents for the proposed project have been forwarded to the Korean Development Bank and the Government of Germany. The financing offered by both Korea and Germany would be tied to contracts awarded to their respective national companies for the implementation of subprojects for which the sponsors have received letters of support and have paid their performance bonds.

4.22 Under PSEDP I, the procedures for coordination among the cofinanciers, including the Bank, is detailed in a Cofinanciers' Memorandum of Understanding (CMU). The CMU outlines the processes involved in monitoring and, where applicable, approving NDFC's decision to finance subprojects; clear bidding documents; approve contract award recommendations; recommend disbursements; reporting pro formas; and annual audit arrangements. The Government of France and JEXIM have signed the CMU under PSEDP I. Amendments to the CMU would be made to reflect the cofinancing provided for the proposed project by the Government of France and JEXIM, and the Governments of Korea and Germany, if they decide to participate in financing the Fund/LTCF.

**Table 4.3: TERMS AND CONDITIONS FOR FINANCING THE FUND**  
(US\$ million equivalent)

Source	Amount	Weight	Interest Rate%
Bank	244	0.67	7.43
JEXIM <sup>a/</sup>	110	0.30	4.70
France	<u>10</u>	<u>0.03</u>	<u>2.64</u>
	TOTAL:	364	1.00 <sup>b/</sup>
			6.47 <sup>b/</sup>

a/ The Board of JEXIM will consider its loan to PSEDF II in November 1994, subsequent to the approval by the Bank's Board. Interest rate set at Long Term Prime - 0.2% applied at time of disbursement.

b/ Weighted average.

#### F. Onlending Interest Rate

4.23 Until recently, the State Bank of Pakistan offered a foreign exchange insurance scheme. Under this scheme, the foreign exchange premia are locked once loans are taken, and apply annually to undisbursed amounts. This guarantees the borrowers a fixed exchange rate for the Rupee with respect to the currencies in which the loans were taken. If the pooled premia for all of the outstanding loans fail to cover the total cost of maintaining the guaranteed exchange rate, GOP bears the difference which has had negative impact on the budget. As a result, in sustaining its emphasis on deregulating the economy and fostering competition while

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**Table 4.2: ESTIMATED PROJECT COST AND FINANCING**  
**(US\$ million)**

	SUBORDINATED DEBT			SENIOR DEBT				EQUITY		REVENUE	TOTAL
	PSEDP I	Proposed (Bank)	Project (Cofinanciers) JEXIM + GOFrance	Foreign Comm. Banks <sup>a/</sup>	Local Comm. Banks	Export Credit Agencies	Other Multi- laterals	Local	Foreign	Local <sup>b/</sup>	
<b>Subprojects</b>											
Hub Power	377	114	110	383	84	335		30	342	57	1,832
APL Pipeline		30		30				16	24		100
Other Projects	22	100	10 <sup>c/</sup>	50	36	50	23	34	100	-	445
<b>Subtotal</b>	<b>399</b>	<b>244</b>	<b>120</b>	<b>463</b>	<b>140</b>	<b>385</b>	<b>23</b>	<b>80</b>	<b>466</b>	<b>57</b>	<b>2,377</b>
Technical Assistance		6	2					3			11
<b>TOTAL</b>	<b>399</b>	<b>250</b>	<b>122</b>	<b>463</b>	<b>140</b>	<b>385</b>	<b>23</b>	<b>83</b>	<b>466</b>	<b>57</b>	<b>2,388</b>

<sup>a/</sup> Foreign commercial banks providing debt under the World Bank ECO and JEXIM co-guarantee plus IFC and CDC.

<sup>b/</sup> Revenue during construction from Units 1, 2 and 3.

<sup>c/</sup> Subsequent co-financing additions would permit a leveraged increase in the amount of debt and equity in total project funding at the following ratios: Subordinate debt 30%; Senior Debt 50% and Equity 20%.

reducing the fiscal deficit, GOP no longer provides foreign exchange insurance through the State Bank of Pakistan. Instead, the private sector and revenue earning public sector companies would have the option of either securing yearly coverage through the commercial banks at market determined rates and having these rates reflected in the tariffs; or have the foreign currency loans components of the tariffs adjusted annually to compensate for the erosion in the value of the Rupee relative to the US Dollar. Under the new policy, the private sector would have sufficient Rupees at the end of every year to convert to foreign exchange to service the debt. The risk to borrowers in this case would be the availability of foreign exchange from local banks in Pakistan. GOP could guarantee the availability of foreign exchange at market rate at the time it is bought. This would provide the comfort required for financing the subprojects.

4.24 Pakistan is phasing out artificial trade barriers and price controls to make its economy more market oriented. Liberalization in the financial sector has given the State Bank of Pakistan increased autonomy, while competition in the financial sector is being promoted through privatization and the licensing of new private sector banks. Interest rates are moving towards market determined levels and their term structure is being realigned with those in the international financial markets. Under the proposed project, the Fund would become the LTCF and operate along commercial standards. Consequently, the arrangements agreed under PSEDP I for setting and reviewing the onlending rates (para 3.21) need to be recast for all new subprojects to accommodate the movement to competitive markets. The onlending rates would henceforth be set and adjusted periodically to reflect benchmark interest rates determined in the international capital markets for both the Hub and other subprojects.

4.25 In the case of the subloan for the Hub Power Project; (a) during the construction of the Investment Project for which the Subloan has been made, a fixed rate of 14% per annum; (b) after completion of construction of such Investment Project but before all loans other than the Subloan for the Investment Project which are senior to the Subloan have been repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing one-year United States Treasury Note rate plus the FERI Margin plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 250 basis points; and (c) after repayment of such senior loans and until the subloans has been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing one-year US Treasury Note rate plus the FERI Margin plus a spread of 400 basis points, and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 350 basis points.

4.26 In the case of all other subloans: (a) during the construction of the Investment Projects for which the Subloans have been made, a fixed rate equal to the greater of (i) the sum of the prevailing Five-Year US Treasury Note rate plus a spread of 200 basis points, and (ii) the sum of the prevailing World Bank Lending Rate plus a spread of 150 basis points; (b) after completion of construction of such Investment Project but before all loans other than the subloans for the Investment Projects which are senior to the Subloans have been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year US Treasury bond rate plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus a spread of 250 basis points; and (c) after repayment of such senior loans and until the subloan has been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year US Treasury Note rate plus a spread of 400 basis points, and b. the sum of the prevailing World Bank Lending Rate

plus a spread of 350 basis points. The intermediation spread will be retained by the Fund/LTCF for onlending to future subprojects, less 25 basis points allocated to PPIB for its services (para. 4.58).

4.27 There is a constraint in setting a variable onlending rate for the Fund during the construction period of subprojects, as larger standby facilities to cover fluctuations in US Treasury Note rate and in the foreign exchange premia would be required. This would increase the Rupee funding requirement of private sector subprojects, and add another burden on the local financial market. Therefore, for each private sector subproject to be financed by the Fund, the onlending rate should be rolled over and capitalized, and be fixed for the construction period at a rate equal to the Five-Year US Treasury Note rate, plus a spread of 200 basis points. Based on these principles and given the prevailing rates in the market in September 1994, the onlending interest rate would comprise 7.2% (the Five-Year US Treasury Note rate) plus 200 basis points.

4.28 This results in an onlending rate of about 9.2% during construction period. GOP agreed to set the onlending rate for eligible subprojects as follows: in the case of the subloan for the Hub Power Subproject: (a) during the construction of the Investment Project for which the subloan has been made, a fixed rate of 14% per annum; (b) after completion of construction of such Investment Project but before all loans other than the subloan for the Investment Project which are senior to the subloan have been repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing one-year United States Treasury Note rate plus the FERI Margin plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 250 basis points; and (c) after repayment of such senior loans and until the subloan has been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing one-year US Treasury Note rate plus the FERI Margin plus a spread of 400 basis points, and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 350 basis points (para 6.1 (j)). In the case of all other subloans: (a) during the construction of the Investment Projects for which the Subloans have been made, a fixed rate equal to the greater of (i) the sum of the prevailing Five-Year US Treasury Note rate plus a spread of 200 basis points, and (ii) the sum of the prevailing World Bank Lending Rate plus a spread of 150 basis points; (b) after completion of construction of such Investment Projects but before all loans other than the Subloans for the Investment Projects which are senior to the Subloan have been repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year US Treasury bond rate plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus a spread of 250 basis points; and (c) after repayment of such senior loans and until the Subloans have been fully repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year US Treasury Note rate plus a spread of 400 basis points, and b. the sum of the prevailing World Bank Lending Rate plus a spread of 350 basis points (para 6.1 (k)). The intermediation spread will be retained by the Fund/LTCF for onlending future subprojects, less 25 basis points allocated to PPIB for its services (para 6.1 (h)).

### **G. Repayment Terms for Onlending**

4.29 The repayment period for loans made by the Fund for eligible private sector subprojects would be up to 23 years, including grace periods of up to eight years.

## **H. Forecast of Sources and Applications of Funds**

4.30 Table 4.4 summarizes the forecast of sources and applications of funds. The forecast interest income, repayments and loan fees to the Fund amount to a total of about US\$992 million over the period (FY95-2005); these numbers are currently being revised. The capital raised amounts to about US\$751 million, representing loans made available to GOP and administered by the Fund (PSEDP I and the proposed project). Additional income would be generated through appraisal fees of \$6 million and commitment fees of \$20 million on undisbursed subloans. Interest income of US\$39 million over the period would be realized from the equity reserve balances resulting from the excess of inflows over outflows from the Fund each year. Disbursements for the Hub, APL and other energy subprojects amount to about US\$786 million. Debt service including interest and repayment of each loan flowing into the Fund would amount to about US\$651 million over the period, and operating expenses would amount to about US\$26 million. This results in accumulated net income into the Fund in the form of equity reserves of about US\$53 million over the eleven year period. Approximately US\$400 million in foreign exchange premia would be collected by the State Bank of Pakistan.

4.31 The equity reserves would allow the Fund to make Rupee denominated senior loans for eligible subprojects in the future. After retaining US\$21 million (40% of the equity reserves) to ensure a financially sound balance sheet, an average of about US\$3.5 million would be generated annually as interest income. This equity would also enable the Fund to leverage additional funds each year through bonds and other long-term debt instruments to provide local cost financing. Details are in Annex 3.

### **I. Appraisal and Supervision of Subprojects**

4.32 The Bank procedures and criteria for review, approval and implementation of private energy projects were established under PSEDP I and incorporated in the loan documents (including subsequent amendments). These are summarized in Box 4.1. GOP reconfirmed that the key covenants under PSEDP I would apply also to PSEDP II subprojects (para 6.3).

4.33 Approval of the subprojects by GOP and completion of the negotiations of Security Package does not imply commitment of financing by the Fund. Financing of subprojects would be contingent on satisfactory appraisals of feasibility studies by the Fund/LTCF. These studies would be carried out in accordance with the Fund's guidelines, and would cover project design, engineering, cost estimates, implementation arrangements, specifications of equipment and goods, financing plan, prices, financial projections, environmental impact assessment, resettlement plans, etc. and all initialed agreements of the Security Package. The Fund's staff would be assisted in the appraisal of subprojects by engineering consultants and financial advisory firms. The engineering consultants would *inter alia* review: (a) suitability of site; (b) availability of inputs; (c) appropriateness of, and experience with, the technology offered; (d) project design; (e) detailed engineering; (f) construction strategy; (g) cost estimates; (h) procurement arrangements; (i) proposed subproject operation and maintenance; and (j) compliance with Bank and Pakistani environmental and resettlement guidelines, whichever are more stringent. The financial advisors would review: (i) the financing plan; (ii) the projected financial performance of subprojects over their expected lives; (iii) the commercial viability of Security Package; (iv) the corporate structure of the subproject company; (v) the equity underwriting arrangements; (vi) the commercial debt and syndication strategy; and (vii) the evaluation of the arrangements under the intercreditor agreements.



**Table 4.4: Summary Forecast of Sources and Applications of Funds (FY95-2005)\***

<u>Sources</u>	<u>US\$ Million</u>	<u>%</u>
Interest Income	963	50
Repayment Received	98	5
Loan Fee	<u>38</u>	<u>2</u>
Sub-total	1099	57
Capital Raised	751	40
Other Income		
Commitment Fee	20	1
Appraisal and Other Fees	6	0
Interest Income on		
Equity Reserves	<u>39</u>	<u>2</u>
Sub-total	65	3
Total Sources	1915	100
<u>Applications</u>		
Disbursements	785	41
Debt Services	651	33
Operating Expenses	26	1
Equity Reserves	53	3
Foreign Exchange Premia	<u>400</u>	<u>22</u>
	1,915	100

\* Details in Annex 3

4.34 The Fund would prepare comprehensive appraisal reports, which with its recommendations, would be sent to the Bank for review on behalf of the cofinanciers before financing for each subproject is approved. In order to ensure that subprojects supported by the Fund/LTCF are technically and financially viable, GOP agreed that all subloans to subprojects would be subject to prior review and approval by the Bank and cofinanciers (para 6.1 (o)).

4.35 As the Fund is expected to deal with a relatively small number of subprojects, it would maintain a small core team of highly skilled professional staff for appraisal and supervision of subprojects, drawing upon specialized consultancy firms for technical services in the appraisal and supervision of the subprojects. Similarly, it will contract as required financial advisors to assist in the specialized review of the financing plans and Security Package as agreed under PSEDP I (para 6.2 (b))

Box 4.1

**Under the original policies and amendments, the following covenants were agreed for PSEDP I and will be repeated under PSEDP II**

- (a) appraisal, approval and supervision of subprojects will be carried out according to standards acceptable to the Bank and the cofinanciers;
- (b) technical consultants and financial firms, if required, will be appointed under terms and conditions satisfactory to the Bank, to assist the Fund in the appraisal and supervision of subprojects;
- (c) subprojects approved for loans by the Fund will comply with the environmental guidelines and resettlement requirements of the Government and the Bank, whichever are more stringent, and the issuance of environmental clearance by the Bank should be a condition of disbursement for all subprojects;
- (d) GOP will furnish to the Bank: (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; (iii) and within six months of the completion of the proposed project, a Implementation Completion Report in a format acceptable to the Bank;
- (e) GOP will require that (i) subprojects should be technically, economically and financially viable; (ii) prices offered for the products of private subproject will be: for electricity, not more than the avoidable cost i.e. being the incremental cost that Pakistan would have incur in generating an additional unit of electricity, adjusted for financing terms available to private sector; for coal, equal to or less than the economic cost of supply (long run average incremental cost of supply expressed in terms of thermal equivalency); and for gas, equal to cif price of fuel oil expressed in thermal equivalency; and that (iv) commercial debt finance be under limited recourse;
- (f) GOP will (i) issue Letters of Support to the sponsors and thereafter execute an Implementation Agreements with each subproject company; and (ii) cause each subproject company to enter into an Energy Purchase Agreement, Fuel Supply Agreement, Construction Agreement, Operation and Maintenance Agreement, when applicable, and any other agreement required for the implementation and operation of the subproject.
- (g) GOP will mandate all investors in subprojects to be financed by the Fund/LTCF to: (i) if required, assign to the lenders/creditors the performance guarantee furnished to private 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; (ii) provide for the private subprojects' lenders and creditors to have recourse to the subprojects assets; and (iii) if required, assign to their lenders/creditors the performance guarantee furnished to the subproject companies by the operator, to which such lenders/creditors will have recourse;
- (h) where the purchasing entity is a government-controlled body, GOP will be the guarantor of the energy purchasing agreements;
- (i) where the fuel supplier is a government controlled body, GOP will be the guarantor of the fuel supply Agreement;
- (j) GOP will provide up to 80% of the additional financing needs arising from an increase in the agreed costs of subproject, through loans from the Fund, provided the remaining 20% of the additional financing is funded by investors' equity and without affecting the provisions agreed under the Implementation Agreement and Energy Purchase Agreement.

## **J. Procurement**

### **General Guidelines for Procurement**

4.36 As is the case under PSEDP I, procurement under the proposed Project would be as follows:

- (a) goods, works and services financed from the proceeds of loans made by the Bank and JEXIM would be procured in accordance with the Bank's guidelines, subject to the proposed exception referred to in para 4.31 below; and
- (b) goods and services financed from the proceeds of loans and mixed credits made by a bilateral or multilateral agency or a co-financing government would be procured in accordance with the procurement rules and procedures of the bilateral agency or the multilateral co-financier;

4.37 GOP's emphasis on promoting private sector involvement in the energy sector is attributable, among other things, to its desire to reduce reliance on public sector funding. As a result, its policy calls for subprojects to be financed on the basis of limited recourse where lenders would have recourse only to the revenues of subprojects and their assets without recourse to government. In order to reduce their risk of financial exposure in the event of delays in the implementation of subprojects which would result in cost overruns and increased interest payments, lenders require both base and standby financing to be fully funded. More importantly, lenders insist that subproject companies have access to standby financing to meet any unanticipated financial obligations, and that it is available for deployment as needed rather than being tied to specific procurement packages. The more complex the procedures for the deployment of standbys, the larger the size of the standbys to mitigate delays in accessing earmarked funds.

4.38 The Fund was created to provide long-term subordinated loans for subprojects in energy, and finance standbys that are required to assure the mobilization of senior debt under limited recourse. Standbys cover the consequences of external macro risks such as exchange rate variations, increases in interest rates, insurance, premia, and material, goods and services that might be required and variation orders that could occur during construction. Typically, as in the case of the Hub power project, construction is carried out under a date-certain, fixed-price turnkey contract (TKC). The up-front, unconditional commitments by project sponsors and lenders to provide standby financing are essential to reduce the risks associated with the project and its overall costs. Such guaranteed availability of funding in case of unforeseen events provide comfort to lenders as well as to contractors. In practice this funding is an overborrowing to cover financial contingencies under an unallocated category and in a pooled arrangement. It is not a special commitment and, in the case of funds provided for this purpose out of the proposed Bank and JEXIM loans, will be subject to Bank suspension provisions. If not used, it is cancelled and the funds revert to the Fund, to finance other subprojects.

4.39 Standbys are provided by the major equity holders and both senior and subordinated lenders. They are drawn down on a *pari passu* basis irrespective of the cause of the cost overrun, on the basis of a strong economic rationale. If the stand-by commitments of different lenders were earmarked for different project components, the "law of averages" would not apply and the total amount of standbys will have to be increased to provide of risk protection. This

of course would increase therefore overall project financing cost. Furthermore, if cost overruns occurred and the Fund (and the Bank) did not participate equally in the stand-by facilities, the commercial banks would have to finance a higher percentage of the project. They would increase the risk premium incorporated in their interest rate, so the overall cost of the project would go up, and its viability decrease.

4.40 The actual amount of standbys provided for through the Fund would be based on a case by case assessment taking into account the risk profile of the subproject. In the case of the Hub Subproject, US\$165.7 million out of the US\$601.5 million committed under PSEDP I and II would be earmarked for standbys. This represents 28% of the Fund's commitment to Hub, and would be divided equally between JEXIM and the World Bank, with each contributing US\$24.4 million under PSEDP I and US\$58.5 million under PSEDP II. The US\$165.7 million provides 66% of the total US\$250.7 million in standbys for Hub, the rest being covered by the senior lenders (34%). However, the likelihood that a significant proportion of this standby would be drawn is extremely small. The fixed-price, date-certain TKC is about four months ahead of schedule on the civil works, with all foundation works completed. Contracts for major equipment are also under a fixed lumpsum price and their manufacture is also three months ahead of schedule. Despite the progress made in implementing the Hub, the lenders still insist that an untied standby facility be in place for successful debt syndication and equity mobilization.

4.41 The provision of stand-by facilities and the *pari passu* draw down of these facilities are essential to ensure the overall economy of the project. Failure to do so would invariably lead to greater difficulties in mobilizing the total financing and in a higher cost of the sub-projects financed through the Fund. The standby financing provided by the Bank would be disbursed against goods, works and related services. Some of these funds might be disbursed against the same items that are covered under the subproject's base financing and which shall have been procured strictly under the Bank's procurement rules. However, because of the pooled nature of the standbys, part of the standby financing might cover cost increases on items that have not been procured following the Bank's guidelines. It is proposed that the proceeds of the proposed Bank loan be used for such goods and works so long as certain safeguards are applied. These safeguards are that the disbursements be for contracts that have been awarded: (a) in accordance with sound commercial practices; (b) with due attention to economy and efficiency; and (c) in accordance with the Bank's eligibility requirements. In addition, such disbursement would not be made against goods and services provided by a subproject sponsor or shareholder. As a general rule, the maximum percentage of Bank funds eligible for standbys for any subproject would not exceed 20%. This proposed exception to existing procurement rules would apply to other future subprojects that are financed or guaranteed on a limited or non-recourse basis. However, this proposal is consistent with recent discussions by the board on procurement arrangements that apply to guarantee operations.

4.42 Proceeds from the proposed loan would also be used to finance insurance that is procured competitively off-shore. This follows limited recourse project finance practices which places major emphasis on the identification, allocation and mitigation of risks in a transparent manner. In order to ensure that the potential proceeds of any claims would be available to the lenders and that the cover is adequate, the commercial banks typically insist that the owner procures all the insurance for the construction phase (rather than relying on the insurance cover normally obtained by contractors and suppliers). To obtain the lowest possible price, insurance financed under the proposed loan would be procured through LIB from firms that have the

highest rating<sup>10/</sup>. In the case of Hub, all of the marine cargo, about 98% of the contractors all risk, and all the related delays during start-up insurance would be procured directly by Hubco under LIB. About 2% of the construction phase insurance would be placed with local companies in accordance with Pakistani law. Since this latter insurance would not be competitively procured, it would not be eligible for World Bank financing.

4.43 As for the APL subproject, procurement would be undertaken in accordance with the procedures outlined above (para. 4.36). Where financing is being provided under the proposed Project, would be in accordance with the Bank's procurement guidelines. No standby financing would be required from the Fund/LTCF as it would be financed by the sponsors.

4.44 The financing plans for the other subprojects potentially suitable for financing by the Fund/LTCF are still general in nature to determine the allocation between base financing and standbys. However, the standbys would not exceed 20% of the overall financing being provided by the Fund/LTCF. The remaining 80% of the financing would be in accordance with the procedures outlined above (para. 4.36).

4.45 Retroactive financing of US\$350,000 will be provided to the PPIB to cover operating costs from June 30, 1994 when USAID grant funds were exhausted, to November 30, 1994, when the proposed loan is expected to become effective. A summary of the procurement arrangements for the subprojects to be financed from the proposed Bank loan is given in Table 4.5.

**Table 4.5: SUMMARY OF PROCUREMENT ARRANGEMENTS  
FOR SUBPROJECTS' COMPONENTS FINANCED FROM THE BANK LOAN**

Subproject	ICB	LIB	Other	LCB	Total
HUBCO*		30	84 <sup>1/</sup>		114
APL	30				30
Other Projects	100		2 <sup>2/</sup>		100
T.A			5	1	6
Total	130	30	89	1	250

\* Details are in Annex 1, para 36.

1/ Of which US\$60 million for standbys and US\$24 million for insurance, fees and interest during construction.

2/ Exact amount of standbys to be determined at financial close.

<sup>10/</sup> Companies should have a Best's Insurance Reports rating of at least "A-" or equivalent, have an Insurance Solvency International Limited rating of at least "A" or equivalent, or receive the highest financial condition rating of any other independent insurer rating organization that issues ratings on not less than five hundred (500) insurers.

## **K. Disbursements**

- 4.46 The proceeds of the proposed Bank loan would be disbursed as follows:
- (a) for subloans jointly cofinanced with JEXIM: 35% of foreign and local expenditures for works, 50% of foreign expenditures (CIF costs) and of local expenditures (ex-factory cost) of equipment, and 50% of insurance procured under limited international bidding;
  - (b) other subloans: 70% of foreign and local expenditures for works, and 100% of foreign expenditures (CIF costs) and of local expenditures (ex-factory cost) of equipment and materials;
  - (c) 100% of interest during construction and other charges accrued on the amounts of the sub-loans financed out of the proceeds of the Loan;
  - (d) for Institution Building: 100% of costs of consultants' services and training, 100% of foreign expenditures (CIF costs) and local expenditures (ex-factory cost) of equipment and materials; 70% of other items procured locally; and 90% of incremental staff costs up to the end of December 1995, and 80% from January 1, 1996 to December 31, 1996.

All procurement would be through ICB, LIB or LCB, or in the case of procurement via the Bank's share of the standby facilities, in accordance with sound commercial practices with due attention to economy and efficiency.

4.47 Insurance payments during the construction phase for the Hub are covered when purchased under LIB by HUBCO. The extent of interest during construction to be rolled up would be limited for each co-financier, including the Bank, to the interest due on its share of loans made to subprojects. Private sector subprojects that are eligible for loans from the Fund are unable to mobilize the local funds to cover interest during construction, in addition to all other financing that needs to be raised. Commercial banks accommodate interest payments during construction by allowing their borrowers to roll up and capitalize this interest at commissioning. Repayments would begin after commissioning when the subproject start earning revenue. The impact of this arrangement on the financing plan of a new private enterprises involved in the construction of their first facility was not adequately addressed when PSEDP I was made. Under the proposed Project, it is recommended that the guidelines for the Fund/LTCF be amended to allow for the rolling up of interest during construction for financing made available to the Fund/LTCF to put it on an equal footing with the practices of the commercial financial markets. Amendments of the guidelines of the Fund reflect changes agreed under the proposed Project including the rolling interest during construction are one of the conditions for the effectiveness of the proposed PSEDP II. Therefore, in order to streamline the mobilization of financing for future private sector subprojects, the guidelines for the Fund will be amended to state that the subloans extended to subprojects would allow for the rolling over of interest during construction for the contribution of each co-financier to the subloans made by the Fund (para 6.3 (c)). CMU will be amended to allow for interest to be rolled over and capitalized. Meanwhile, it is proposed that some of the loan funds be utilized to finance the interest payments to be made on subloans during construction.

4.48 Disbursements for sub-loans would be fully documented. Each subproject would be audited annually according to appropriate auditing principles by independent auditors acceptable to the Bank. The standard procedures for auditing financial institutions would apply to the Fund's operations. The Special Account established in a commercial bank under PSEDP

I would be maintained, however, preference will be given to direct disbursement to contractors. Disbursements under the institution building component of the Project would be made against Statements of Expenditure (SOE) for consultant services contracts valued at US\$100,000 or less for firms and US\$50,000 or less for individuals; equipment contracts valued at US\$200,000 or less; and for all incremental staffing cost and training. Documentation for which would not be submitted to the Bank but retained for inspection by supervision missions. A disbursement of US\$350,000 would be made to PPIB to cover its staff and consultancy costs incurred since July 1, 1994. A schedule of disbursements is presented in Table 4.6. The schedule covers a four-year period, based on the drawdowns spelled out in turnkey contracts for the Hub Power Subproject and the APL Fuel Oil Pipeline Subproject. Disbursements for other energy projects under preparation are estimated. The loan closing date would be December 31, 1999.

4.49 JEXIM is jointly financing with the Bank on a 50:50 basis. The Bank will administer the disbursements on behalf of JEXIM for the subloan component. The Co-lender Agreement between the Bank and JEXIM will reflect the administrative arrangement which would include a fee in accordance with the existing policy. The disbursement of other cofinanciers' funds would be made in accordance with their respective guidelines, however JEXIM's disbursement would follow Bank guidelines.

**Table 4.6: Disbursements of PSEDF II**

	FY95	FY96	FY97	FY98
Annual (US\$ Million) -				
HUBCO	79*	35		
APL	20	10		
Other projects	8	22	35	35
TA	—	3	3	—
Sub-total	107	70	38	35
Cumulative (US\$ M)	107	177	215	250
Cumulative (%)	43	71	86	100

\* Includes US\$60 million of standby financing available for draw-down from the first day. See Annex 1 for details (para 37).

4.50 The disbursements to HUBCO and APL (when it is approved) are based on the agreed payments called for under their respective TKCs. Construction of the Hub power plant started December 1992, following the payment of the first tranche under the mobilization payment (para 1.6). According to the revised TKC, the first unit would be commissioned on June 30, 1996 and the three other units would follow three months apart. As for APL's pipeline subproject, implementation is scheduled to begin in FY94 and be completed in FY96. The implementation timetable has a corresponding disbursement schedule which is firm, and hence the disbursement schedule shown above is expected to materialize. Disbursements for other subprojects under preparation should take place within the four year period, as a number of

subprojects, that are now committed irrevocably to achieving financial close within 6 months from now and paid their security deposits in excess of US\$1 million each.

4.51 As the Hub Subproject is being undertaken under limited recourse, senior lenders require that all standbys be earmarked and set aside at the time of financial closure. In the case of the Hub subproject, a commitment charge will be paid for the availability of these funds. Consequently, US\$29 million of the replenishment by the Bank would be for standby funding, to be available at the Bank to be drawn during the disbursement period, if needed. JEXIM would also earmark the same amount for standby and would disburse funds under this category on a *pari pasu* basis. The amounts so earmarked will not be in the nature of a special commitment and will be subject to the Bank/JEXIM suspension provisions (para 4.36-4.41).

#### **L. Environmental and Resettlement Aspects**

4.52 Environment and resettlement guidelines for the subprojects, outlined in a brochure issued by GOP, specify the following 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 case of involuntary resettlement; and procedures for implementing and monitoring rehabilitation plans. Prior to the issue of letters of support for subprojects, GOP would conduct a preliminary environmental/resettlement screening to assess the site and technology alternatives.

4.53 The Fund's development plan to be prepared by consultants to be financed under the proposed project (para 4.5) should include: (a) an assessment of the adequacy of existing environmental guidelines, environmental screening criteria and procedures in the power and infrastructure sectors and environmental assessment review capacity procedures of GOP and the Fund; (b) an assessment of their capacity to monitor implementation and ensure compliance with GOP and Bank requirements; and (c) recommendations for measures to strengthen environmental guidelines and procedures, as needed, and develop the Fund's capacity to carry out and incorporate adequate environmental "due diligence" into its loan appraisal and management procedures. As agreed under PSEDP I, GOP has reconfirmed that subprojects approved for loans from the Fund/LTCF will comply with the environmental guidelines and the resettlement requirements of the Government and the Bank, whichever are more stringent, and the issuance of environmental clearance by the Bank would be a condition of disbursement for all subprojects.

4.54 For the Hub Power Subproject, an Environmental and Social Soundness Assessment (ESSA) was prepared by EBASCO (USA) in accordance with Bank guidelines. The study examined the impact of the project on aquatic resources, socioeconomics, air and water quality. It also addressed institutional issues relating to employment and public participation, and it described an operational monitoring program. The ESSA investigated the process of acquiring the 585 ha project site. 51 percent of this land was privately owned, acquisition of which was completed by 1992. This land was partly used for dry-land agriculture and grazing, and 506 families were residing on the land. The owners of land were compensated under the existing land acquisition legislation. According to the ESSA, no complaints were reported. In consultation with World Bank staff, it was decided on October 2, 1992 that land ownership issues had been properly addressed at the plant site, and that no further investigations needed to be made regarding tribal issues.



4.55 The ESSA for the APL Fuel Oil Pipeline was undertaken in connection with the Hub and cleared by the Bank. This subcomponent will require acquisition of 7 ha of land along a 77 km right of way (ROW), of which 14 ha is used for agriculture, most of it marginal. The remaining area is wetland and wild bush and rangeland. The study recommends a change in the alignment to avoid some existing and planned urban settlements near Karachi (1.35 km of the ROW). With this solution, the Bank has not asked for a Resettlement Plan. It was assumed that land owners will be fairly compensated as per legislation, through a process of negotiation with PSO, and that there are no outstanding issues with respect to land tenure and user rights.

### **M. Reporting and Accounts**

4.56 In order to streamline the process of satisfying the reporting requirements of the various cofinanciers of the Fund, GOP has requested the Bank to formulate a common reporting package for all cofinanciers. In cooperation with the other cofinanciers, the Bank has recommended that the reporting package include a quarterly progress report on the Fund's and each subproject's operations, with a statement on utilization of funds from each co-financier; annual financial statements of the Fund and each subproject duly audited by an independent auditor acceptable to the Bank; and an Implementation Completion Report within six months after the completion of the proposed project and each subproject. In order to facilitate Bank monitoring of the proposed project, GOP reconfirmed as agreed under PSED P I to furnish to the Bank: (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, an Implementation Completion Report in a format acceptable to the Bank (para 6.02 (d)). These would be available to all other cofinanciers of the Fund.

### **N. Institutional Refinements**

4.57 Despite the progress made to date, the institutional structure developed under PSED P I has proven to be complex and slow, involving several repetitive negotiations and clearances. This experience, together with the feedback from the private sector and the examination of similar issues in other countries, provided the basis for GOP to put in place a new institutional structure that improve efficiency. The new structure builds on the procedures that have emerged through trial and error over the past five years to streamline the institutions created under PSED P I. GOP has recognized the need for an apex organization that would act as a single window to handle all government inter-face with the private sector. The Private Power Cell at MWP has been designated the PPIB to coordinate all the government agencies' input and implement policy to rapidly mobilize private resources for energy development (para 3.24). PPIB has the full mandate as the GOP agency responsible for the negotiations of all agreements with private sector. Technical support and advice could be sought from WAPDA, PSO and other public sector agencies and enterprises as required. The negotiations of the power purchase agreements by PPIB on behalf of GOP would be totally within GOP's purview as it is the ultimate guarantor of the performance of WAPDA under this agreement. GOP has also decided that in view of the synergies gained and the implementation of project activity, the Fund would be detached and established as an autonomous and independent financial institution, as agreed under PSED P I (para 3.26), operating on a commercial basis to provide long term finance for private sector infrastructure projects.

### **Private Power and Infrastructure Board**

4.58 The PPIB, developed from the PPC and formally operational on June 1, 1994, is to be autonomous of GOP regulations in terms of its finances and staffing. The day-to-day operations are the responsibility of a President who reports to a Board of Directors that would set PPIB's guidelines and approve management's recommendations. The Board directors are senior representatives from the Ministries of Water and Power, Finance, Communications, Petroleum and Natural Resources as well as NDFC, WAPDA, KESC and the Pakistan's Board of Investment. The Special Assistance to the Prime Minister (Economic Sector) is the chairman of the Board. To ensure its financial autonomy, it is proposed that PPIB be allocated yearly 25 basis points from the spread (para 4.28) and 30% of the commitment charges and front-end fees to be paid to the Fund/LTCF by each subproject on approval. This would provide a steady income, independent of the Ministry, to finance legal and technical advisory fees as well as to pay its staff, which consists of a small, highly qualified professional cadre that works closely with the private sector in developing the country's energy sector. However, PPIB staff trained under PSEDP I are being actively recruited by local banking institutions which offer much higher salaries. Therefore in order to retain this staff and prevent the depletion of GOP's project-finance capabilities, PPIB needs an independent staffing mandate (i.e., no transfers from the civil service) and a salary scale commensurate with private sector for career appointments. GOP has agreed to appoint by March 31, 1995, management consultants satisfactory to the Bank to outline the structure for PPIB, the profile for its staff and a framework for its financial performance and autonomy (para 6.1 (m)).

### **The Fund**

4.59 Under PSEDP I, the Fund was created with the understanding that it will develop in three stages and eventually become independent of NDFC when its staff, and credibility are established. The first stage in its development covered the recruitment of staff and the appointment of consultants to support its operations during the first few years. The second stage covered the recruitment of consultants to design the organizational structure for the Fund, prepare the operational manuals, and develop a staffing strategy. The third stage would involve a study by the consultants to assess the feasibility of establishing the Fund as an autonomous finance institution, and launch the process of detachment. The first two stages have been completed successfully and the third stage would be implemented under the proposed project in a modified form, as described in para 4.63.

4.60 As agreed under PSEDP I, GOP appointed in October 1989 consultants to assess the merits of establishing the Fund as an autonomous financial institution. Furthermore, GOP had agreed to review with the Bank by March 31, 1990 the recommendations of the study and agreed on a timetable for their implementation. In view of the delays in reaching financial closure for Hub Power Subproject, and the absence of other subprojects, GOP and the Bank agreed that the study be postponed until financial closure of the first project. In the meanwhile staff received extensive hands-on training and experience in the appraisal of the Hub Power Subproject, and had been involved in all aspects from the inception stage and moving with it through the preparation of the feasibility study; the environmental study; structuring and detailing the provisions under each of the agreements in Security Package; the financing plan, local equity and debt mobilization and the structuring of the guarantees under the Bank's ECO facility and those of the ECAs. Fund staff have prepared the appraisal report of the Hub Power Subproject

in extensive collaboration with the Bank, which provided an unique opportunity for a transfer of know-how in terms of analysis and appraisal of projects by multilateral institutions in a modified manner.

4.61 Although slow at times to make decisions concerning the Hub Subproject without the assistance of the Bank, Fund staff have developed a credible capability to deal with complex projects, such as the Hydrocracker Subproject which is proposed to be financed by the Fund in FY95, and in the appraisal and negotiations of other power subprojects. The consensus amongst the cofinanciers is that the Fund's efficiency and effectiveness is undermined by the environment in which it operates. The current compensation package for the staff is based on the public sector pay scale. This tends to undermine enthusiasm and create friction within NDFC when the pressures and burden involved in the appraisal of major infrastructure projects is compared with those carried by the rest of the staff who deal with much smaller and simpler projects.

4.62 The Fund's continued presence in NDFC is already leading to its bureaucratic absorption as another arm of the public sector. Moreover, as NDFC reports to the Ministry of Finance, Fund activities are reviewed by various departments of the Ministry which frequently mix private and public sector approaches to project appraisal and negotiation. If the Fund is to maintain its critical mass and the level of competence it has acquired, its operations should be separated from the direct control of the Ministry of Finance and NDFC. Its operations should be based on commercial principles and practices, and its management re-oriented from public sector practice to that of a profit-making financial enterprise with clear and measurable indicators. Being a separate private institution would require its presence in Karachi, the financial center of Pakistan, to inter-relate daily with other local banks, and branches of foreign international banks that are operating in the country. It could also collaborate with them in the areas of syndication of local cost financing, developing of new financial instruments and identifying potential institutional equity investors. The Fund already has an income based on a fee structure stipulated under PSED I, which requires review every three years. The current structure is as follows: (a) Application Admission Fee: Rs. 50,000 non-refundable to be submitted at application; (b) Project Examination Fee: 0.25% of the loan amount non-refundable, payable along with the submission of the feasibility study. Maximum US\$250,000; (c) Legal Documentation Fee: 0.25% of the loan amount non-refundable; (d) Commitment Changes: 0.75% per annum on the unutilized amount for the loan, effective 60 days from the date of loan agreement; and (e) Project Monitoring Fee: Where NDFC is the technical bank or agent for the lenders 0.75% per annum of the loan for five years (maximum \$500,000 per annum) commencing 30 days from the date of financial close, and thereafter 0.125 per cent per annum on the loan for five years (maximum \$250,000 per annum). In other cases, a lower fee may be negotiated.

4.63 The Fund was created to provide long term subordinate financing for private sector infrastructure projects to bridge a gap in the financial intermediation system of Pakistan. With this feature, the Fund would act as the focal point for mobilizing financing from bilateral and multilateral and, as its financial strengths develop gradually, seek commercial loans in the market, securing them against the strength of its balance sheet. Furthermore, it could provide partial financing for provisions, i.e. standbys, escrow accounts, contingencies, etc., needed to mobilize equity and commercial debt under limited recourse for energy subprojects. It is agreed that the process of detaching the Fund from NDFC would begin with the effectiveness of this proposed Project. As a first step, a Board of Directors would be appointed for the Fund, with 60% of the directors from the private sector, and 40% from the public sector institutions

including NDFC, National Investment Trust and the Ministry of Finance. This Board would immediately appoint a Managing Director recruited competitively and acceptable to the Bank and the cofinanciers. The Managing Director in consultation with the Board and the Bank, would draw up the terms of reference for the consultants who would be recruited to formulate a framework for the Fund to operate as an autonomous institution, as described in para 4.64. The reconstitution of the Fund as an autonomous, commercially oriented LTCF, and appointment of the Board of Directors and Managing Director acceptable to the Bank, is a condition for the effectiveness (para 6.3 (d)).

4.64 Consultants would be required to assist the Bank and the LTCF in outlining the structure of the new Fund, its proposed staff profile and a framework for its operations with the view to transforming the Fund from its current status as an unit in NDFC to an autonomous, self sustaining LTCF. The consultants, who should have merchant banking as well as management credentials, would specifically look at the necessary measures needed to make the proposed LTCF attractive to the private financial institutions operating in Pakistan to participate in cofinancing and managing the facility. A consultant team member with environmental expertise would assess existing "due diligence" capacity and recommend measures to develop such capacity within the Fund. The cost of this consultancy would be covered by technical assistance funds provided under the proposed project. GOP agreed that it would mandate the Board of the LTCF to appoint by March 31, 1995 international consultants with appropriate banking and management expertise acceptable to the Bank to formulate a framework for the operations of LTCF as an administratively and financially autonomous institution. The consultants' draft report be reviewed with the Bank by December 31, 1995 (para 6.1 (n)). The consultants, as part of their scope of work, would:

- (a) consider the possibilities of using other financial instruments that would wholly or partly replace the subordinated debt financed indirectly by the government;
- (b) outline an organizational structure, staffing plan and a compensation package for staff;
- (c) recast the guidelines for the Fund/LTCF to allow it to finance energy related infrastructure subprojects;
- (d) set financial performance indicators for the Fund/LTCF, a financial monitoring and budgeting system, and a financing plan, including full cost recovery; and
- (e) formulate an environmental "due diligence" plan for Fund/LTCF, based on an assessment of the adequacy of existing GOP environmental guidelines and procedures, and including screening criteria, environmental data acquisition formats, evaluation of compliance costs, and a staff training plan.

## **V. PROJECT JUSTIFICATION**

### **A. Project Rationale**

5.1 Under its country assistance strategy the Bank has played a major role in creating the enabling environment for private sector participation in energy. In addition, the Bank has taken the lead in setting up the institutions required for the evaluation, negotiations and financing of private sector energy projects. Extensive technical assistance has been provided under financing by USAID, ODA, the Government of Japan and the Bank.

5.2 The Bank also has played a catalytic role in mobilizing cofinancing from bilateral and other multilateral institutions for the Fund. This role has been critical in providing additional capital to the Fund, by leveraging in resources of the cofinanciers', which in turn mobilized funding from private sources in the form of equity and debt secured under limited recourse. As a result of these efforts, the Fund is now fully functional with capital and commendable expertise in the area of project-finance.

5.3 Although not anticipated at the time PSEDP I was made, the Bank took the lead in assisting GOP, the sponsors, the ECAs and the commercial banks in structuring the agreements under the Security Package and providing the ECO for the Hub Subproject to mitigate risks that the investors and lenders were unable to assume. Furthermore, to leverage support for the Hub subproject, JEXIM joined as a co-guarantor with the Bank under the ECO, the first such operation with a bilateral agency. The Bank also has played an important role in securing financing from export credit agencies without guarantees from GOP. The Fund and the ECO Guarantee have been the two vehicles by which the Bank has leveraged its resources to mobilize additional financing, commercial and official, from various sources to support the implementation of subprojects under the proposed project.

5.4 The continued support of the Bank under the proposed project would ensure that the Fund's achievements would not be one-time effort. It would push the frontier of project-finance further by ensuring that the responsible institutions are strengthened and their mandates sharply focussed, so that subprojects which contribute to the overall objectives of Pakistan's policy of economic deregulation and privatization are realized. The proposed project would also set the stage for a third tranche of financing for more subprojects in the energy sector. A stand alone loan to be processed through the Fund is currently being prepared for the proposed Hydrocracker Subproject, which would allow Pakistan to produce higher value products from the fuel oil currently being produced by the two major refineries in Karachi.

### **B. Benefits**

5.5 The proposed project would bring the Hub Power Subproject to financial closure, the first private power plant to be financed by the Fund. The Hub Subproject provided the basis for significant transfer of know-how to the newly created institutions responsible for private power in Pakistan. It also provided a vehicle for cofinancing private sector subprojects with commercial lenders, bilateral and multilateral agencies, and investors. The proposed project would ensure that the lessons learned from Hub are used to quickly bring on-stream two other subprojects that are at an advanced stage of preparation. The proposed project would streamline

the institutional framework for private energy by capitalizing on the experience gained in negotiating, processing, and financing the Hub Subproject. Two institutions, PPIB and the Fund, which will ultimately carry on as lead agencies responsible for facilitating private investment in energy, would be strengthened. PPIB would be restructured to become a single stop window for the negotiations and approvals of private power subprojects, and the Fund would be strengthened to become an autonomous financial institution and Pakistan's first long term project finance facility to operate commercially. The proposed project would also replenish the Fund to provide subordinate debt for power subprojects currently at an advanced state of preparation. The proposed project would contribute to reducing the future size of load shedding in Pakistan, and stimulate large private investment in the power and petroleum sectors.

### **C. Economic Justification and Economic Rate of Return**

5.6 All subprojects to be financed by the Fund should yield an internal economic rate of return exceeding 18%, to encourage private investment inflows to fund needed power plant so that Pakistan can remain competitive with other countries that are offering equivalent or higher returns.

### **D. Risks**

5.7 Implementation of private sector subprojects involves the same risks associated with public sector projects. The difference between the two centers around the allocation of those risks. Under public sector projects, governments or parastatals assume the risks pertaining to completion, cost overrun, foreign exchange and interest rate fluctuations, and performance. With private sector projects, these risks are shared. The completion and cost overrun risks are assumed by turnkey contractors, backstopped by the equity investors and, ultimately, the lenders. The turnkey contractors, who enter into fixed lump sum contract price, provide both the completion and performance guarantees. Upon failure by turnkey contractors to perform, lenders would have recourse to these guarantees, the standby equity and contingencies to finance cost overruns attributable to delays, and if further funding is required, investors and lenders would provide it to ensure projects are completed. Contractors' failure to perform cancels their profits as well lowering investors' returns.

5.8 As for foreign exchange and interest rate risks, since there is no recourse except for project companies, lenders and investors require that these costs be incorporated in the overall financing plan and funded at the outset, and covered in the financing plans through allowances, contingencies and standbys. Project companies may mitigate risks associated with foreign exchange and interest rate risks by hedging and swapping variable for fixed interest rate, if this option is cost effective. Performance risks following commissioning of projects are also of concern, and continue for the lenders until debt is retired, and for the shareholders until their equity is recouped.

5.9 These risks have been at the center of the structure of Security Packages for HUBCO and APL. Both are implementing their subprojects under lump sum, fixed price turnkey contracts where contractors provide completion and performance guarantees, ranging between 10% and 15% of the TKC prices. Contractors for subprojects financed by the Fund

are expected to assume design, construction, procurement and completion risks. Provisions for contingencies and standbys amount to 15% of total cost of these subprojects. These are in addition to the guarantees extended by turnkey contractors.

5.10 The possibilities for cost overruns in the case of Hub are extremely small as the excavation and foundation work have been completed under the mobilization financing. Currently, the civil contractor is about three months ahead of schedule and most of the remaining work involves above ground structures where risks are relatively small. Turbo generators and boilers have been ordered and are currently under construction and supervision reports also indicate they are ahead of schedule. The risks associated with foreign exchange and variable interest rates have been addressed in the financing plan by increasing the contingencies and standbys as currency hedging and interest rates swaps were found to be too expensive, and extreme care has been given to matching currencies available with financing needs on a monthly basis to minimize such costs. As for performance after commissioning, one of the sponsors and a lead shareholder is National Power, a major private power company in the United Kingdom, will be the operator of the power complex. Another major shareholder, Entergy is one of the largest investor-owned power utilities in the United States. HUBCO would also have a technical support contract that draws on international utility expertise in the United Kingdom and the United States.

5.11 The risk of not securing all the senior debt and equity has been settled with all the debt and equity underwritings being over-subscribed, signed and made unconditional on September 30, 1994.

5.12 The APL pipeline subproject has been designed by an internationally reputable firm. The survey right-of-way is completed, the turnkey contractor has been appointed and preparation of bidding documents for the supply of pipes, pumps and compressors is underway. The financing plan is being firmed up by the shareholders who would underwrite any gap in debt should it arise. The turnkey contractor would provide a fixed lump sum price and liquidated damage for completion and performance of 15% of the turnkey contract price. Contingencies and standbys, amounting to 15% of the overall cost, have been provided in the financing plan to cover completion risks in the event of force majeure, and foreign exchange and interest rate changes. Performance risks of the pipeline company would be mitigated to the maximum extent possible by having an internationally reputable operator assume all operations risks as a member of the consortium which holds the majority shareholding in APL. The consortium also includes an oil supplier who would guarantee delivery of oil in the quantities and quality required.

5.13 Finally, the component of the proposed project which is earmarked for other power subprojects currently under preparation is expected to start disbursing within a year of the proposed loan being made effective. Already six of these potential subprojects have completed the negotiations of their Security Packages, and the finalization or award of the turnkey contracts are underway. This will allow them to move shortly to the stage of mobilizing debt as their equity is almost fully taken.

## **VI. SUMMARY OF AGREEMENTS AND RECOMMENDATION**

### **6.1 GOP has agreed that it will:**

- (a) closely monitor and evaluate the experience of a new policy regarding private energy generation, and submit to the Bank its recommendations regarding further refinements in the policy not later than June 30, 1996 (para 3.3);
- (b) review as part of its assessment of the overall policy regarding private energy generation the exemptions of the power sector from corporate income tax and the potential for rolling over and capitalizing customs duties, Iqra and import taxes, and recovering these from enterprises in the energy and energy related infrastructure during the operating phases (para 3.7);
- (c) declare that all taxes, duties and levies should they be imposed on future private power and energy related infrastructure enterprises would be treated as pass through items to be reflected in the tariff and collected from consumers of electricity (para 3.7);
- (d) set the benchmark tariff for the Pakistan power system for the purchase of electricity at the high voltage from private sector at the equivalent of US\$6.5/kWh, inclusive of the foreign exchange insurance premia. This tariff should be adjusted every six months by the changes in the costs of commercial borrowing, foreign exchange risk cover, O&M and fuel (para 3.10);
- (e) continue to provide an explicit outline of the indices to be used for adjusting the benchmark tariff of US\$6.5/kWh, the methodology used in deriving these indices, and the approach to be used for their application (para 3.10);
- (f) declare as part of its policy measures that the return on investment components of the tariff for private sector projects in energy and energy related infrastructure would be indexed annually to compensate for the depreciation of the Rupee relative to the US dollar (para 3.10);
- (g) (i) allow full repatriation of dividends and principal capital by foreign investors; and (ii) compensate investors for loss of dividends, initial capital investments and capital appreciation in the events of default by public institutions in their obligation under the Security Package or an event of political force majeure involving Pakistan (para 3.11);
- (h) declare that loans from the Fund to be subordinated to senior lenders' loans in both debt service and security (para 3.12);
- (i) allow private sector subproject companies to create escrow accounts and fund them either at the outset of the financing plan or from the revenues generated by the subproject companies after commercial operations (para 3.13);
- (j) in the case of the Subloan for the Hub Power Subproject, set the onlending interest rate:
  - (i) during the construction of the Investment Project for which the subloan has been made, a fixed rate of 14% per annum;
  - (ii) after completion of construction of such Investment Project but before all loans other than the Subloan for the Investment Project which are senior to the Subloan have been repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing One-Year United States Treasury Note rate plus the FER Margin plus a spread of 300 basis points,



- and b. the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 250 basis points; and
- (iii) after repayment of such senior loans and until the Subloan has been fully repaid, a variable rate, to be reviewed annually, equal to the greater of (a.) the sum of the prevailing one-year US Treasury Note rate plus the FERI Margin plus a spread of 400 basis points, and (b.) the sum of the prevailing World Bank Lending Rate plus the FERI Margin plus a spread of 350 basis points (para 4.28).
- (k) in the case of all other subloans set the onlending interest rate:
- (i) during the construction of the Investment Projects for which the Subloans have been made, a fixed rate equal to the greater of (a.) the sum of the prevailing five-year US Treasury Note rate plus a spread of 200 basis points, and (b.) the sum of the prevailing World Bank Lending Rate plus a spread of 150 basis points;
  - (ii) after completion of construction of such Investment Projects but before all loans other than the Subloans for the Investment Projects which are senior to the Subloans have been repaid, a variable rate, to be reviewed annually, equal to the greater of: a. the sum of the prevailing one-year US Treasury bond rate plus a spread of 300 basis points, and b. the sum of the prevailing World Bank Lending Rate plus a spread of 250 basis points; and
  - (iii) after repayment of such senior loans and until the Subloans have been fully repaid, a variable rate, to be reviewed annually, equal to the greater of (a.) the sum of the prevailing one-year US Treasury note rate plus a spread of 400 basis points, and (b.) the sum of the prevailing World Bank Lending Rate plus a spread of 350 basis points (para 4.28);
- (l) following commercial operations of each subproject, the onlending rate for the Fund would be reviewed in April of every year to reflect the prevailing market interest rates and the new onlending rate would be implemented effective July 1, of every year, and that the revised interest rates would be reflected automatically in the tariff for the sale of electricity. The intermediation spread for onlending would be retained by the Fund for re-lending to future private sector subprojects less 25 basis points allocated to PPIB (para 4.28);
- (m) recruit management consultants satisfactory to the Bank by March 31, 1995 to outline the structure for PPIB, the profile for its staff and a framework for its financial performance (para 4.58);
- (n) mandate the Board of the LTCF to appoint by March 31, 1995 international consultants with appropriate banking and management expertise acceptable to the Bank to formulate a framework for the Fund to operate as an administratively and financially autonomous LTCF, and that the consultants' draft report be reviewed with the Bank by December 31, 1995 (para 4.64); and
- (o) subject all loans to prior review and approval by the Bank and cofinanciers (para 4.30).

**6.2 The following covenants are repeated from PSEDP I (Box 4.1) and GOP confirmed its agreement that:**

- (a) appraisal, approval and supervision of subprojects will be carried out according to standards acceptable to the Bank and the cofinanciers;
- (b) technical consultants and financial firms will be appointed under terms and conditions satisfactory to the Bank, to assist the Fund in the appraisal and supervision of subprojects;
- (c) subprojects approved for loans from the Fund will comply with the environmental guidelines and the resettlement requirements of the Government and the Bank, whichever are more stringent, and the issuance of environmental clearance by the Bank would be a condition of disbursement for all subprojects;
- (d) it will furnish to the Bank:
  - (i) quarterly progress reports within six weeks of the end of each quarter and 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, an Implementation Completion Report in a format acceptable to the Bank;
- (e) it will require that:
  - (i) subprojects be technically, economically and financially viable;
  - (ii) prices offered for the products of private subproject will be: for electricity, no more than the avoidable cost i.e. being the incremental cost that Pakistan would have to incur in generating an additional unit of electricity, adjusted for financing terms available to private sector; for coal, equal to or less than the economic cost of supply (long run average incremental cost of supply expressed in terms of thermal equivalency); and for gas, equal to cif price of fuel oil expressed in thermal equivalency; and that
  - (iii) commercial debt finance be under limited recourse;
- (f) it will:
  - (i) issue a Letter of Support 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, when applicable, and any other agreement required for the implementation and operation of the subproject;
- (g) it will mandate all investors in subprojects to be financed by the Fund to:
  - (i) if required, assign to the lenders/creditors the performance guarantees furnished to any private subproject companies by the main contractors responsible for subproject implementation to which such lenders and creditors could have recourse in the event of delays in the subproject implementation, and;
  - (ii) provide for the private subprojects' lenders and creditors to have recourse to the subprojects' assets;
  - (iii) if required, assign to their lenders/creditors the performance guarantee furnished to the subproject companies by the operator, to which such lenders/creditors will have recourse;
- (h) where the purchasing entity is a government-controlled body, GOP will be the guarantor of the energy purchasing agreements;

- (i) where the fuel supplier is a government controlled body, GOP will be the guarantor of the fuel supply agreement;
- (j) it will provide up to 80% of the additional financing needs arising from an increase in the agreed costs of subproject, through loans from the Fund, provided the remaining 20% of the additional financing is funded by investors' equity and without affecting the provisions agreed under the IA and EPA.

6.3 **As a condition for effectiveness of the proposed loan, GOP agreed that:**

- (a) it will announce that the incentives and safeguards currently available to private power generation would be extended to energy related infrastructure facilities such as terminals, ports, pipelines, storage facilities and power transmission lines (para 3.18);
- (b) it will obtain the signature on the loan agreements between itself and the Government of France and JEXIM and the fulfillment of their conditions precedent (para 4.21);
- (c) it will amend the guidelines for the Fund to state that the subloans extended to subprojects would allow for the rolling over of interest during construction, for the contribution of each cofinancier to the subloans made (para 4.47);
- (d) it will reconstitute the Fund as an autonomous, commercially oriented LTCF and appoint a Board of Directors and a Managing Director acceptable to the Bank and cofinanciers (para 4.63); and
- (e) it would issue the consents clear the acquisition of the right-of-way, and approve the Security Package for the APL subproject (para 4.13).

**Recommendation:** Subject to the above conditions, the project is suitable for a Bank loan of US\$250.0 million equivalent.

**PAKISTAN**

**PRIVATE SECTOR ENERGY DEVELOPMENT PROJECT II**

**Hub Power Subproject**

**I. HISTORICAL DEVELOPMENT**

1. In 1987 GOP requested private sector proposals to design, finance, construct, own and operate power plants to supply the national grid, and received 20 submissions ranging in capacity between 2 MW and 600 MW. GOP accepted two proposals, from Xenel Industries (Saudi Arabia) and Hawker Siddeley Power Engineering (United Kingdom), of 600 MW each. Xenel Industries's proposal was to construct its plant (2 x 300 MW) at Zairat Hassan Shah Island off the port of Karachi, and the Hawker Siddeley proposal was to construct its plant (4 x 150 MW) in Nooriabad 34 km north of Karachi. After review of the Xenel proposal, GOP decided that the location of the plant was not appropriate because of environmental considerations, as the level of pollution in Karachi is already high due to a heavy concentration of industries and power plants. In addition, the Xenel plant would have required 220-kV lines connecting the proposed station to WAPDA's network outside Karachi, which would have had to pass through the city's densely populated area. As for the Hawker Siddeley proposal, there were concerns about the higher cost of the 150 MW units and the economic merit of the delivery of fuel oil to the power plant by PSO using tanker trucks. These two factors would have resulted in a tariff for Hawker Siddeley's plant higher than WAPDA's avoidable cost. Consequently, GOP decided to select a new location for both plants which would provide economies of scale in terms of the supply of fuel and the interconnection with WAPDA's transmission system.

2. Several sites were examined in terms of efficiency of delivery of fuel, ease of interconnection with the national transmission network, and environmental considerations, before the Khalifa Point site at the mouth of the Hub River in Balochistan on the Arabian Sea, some 40 km northwest of Karachi, was selected. Fuel can be delivered easily to the site by barges or by pipeline. Linkage with WAPDA's transmission network would be facile by cutting eastward across Balochistan's virtually uninhabited desert and connecting with WAPDA's network near Jamshoro in the Province of Sindh (Map No. IBRD 22535). At this point, Xenel and Hawker Siddeley saw the merits of combining forces as lead sponsors (LS) to: a) capture the economies in sharing infrastructural facilities such as fuel, water supply systems, and housing colonies; and b) achieve better coordination in negotiating with GOP. In order to ensure that the site for the Hub Power plant would meet environmental standards, an environmental screening study was undertaken by KBN Engineering and Applied Sciences, Inc. (U.S.), under financing from USAID. The study found environmental conditions at the site appropriate for an oil-fired power plant of about 1,300 MW. In addition, the study outlined a program for the installation of monitoring equipment for compiling data on ground and air pollution, and outlined terms of reference for the environmental impact study. This provided the basis for the design of the power plant in compliance with the environmental guidelines of GOP and the Bank. The environmental impact study was completed by EBASCO and K&M Consultants (U.S.) and approved by the Bank (para 10).

## **II. SUBPROJECT PREPARATION**

3. A pre-feasibility study was submitted by LS to GOP in May 1987. The study outlined the parameters for the power plant design and operations, the indicative financing plan and financial costs, and the tariff for sale of electricity to WAPDA. After review by the Bank, WAPDA, and GOP, the recommendations of the pre-feasibility study were accepted and a Letter of Intent (LOI) was issued in April 1988. The LOI outlined the responsibilities of LS and GOP, and the tariff for the sale of power to WAPDA, which was agreed at Rs 0.88/kWh (US\$5.0/kWh)<sup>1/</sup> for the first 12 years of operation, and Rs 0.68/kWh (US\$3.9/kWh) for the remaining 18 years. The capital cost was to be adjusted for inflation, exchange rate fluctuations, and changes in design required by GOP until the initial payment, amounting to 15% of the turnkey construction contract (TKC) price, is made to the contractor. Moreover, GOP agreed that increases in costs associated with changes in design and construction needed to meet GOP's environmental considerations would be treated as pass through to be reflected automatically in the agreed tariff. Financial costs such as front end fees, commitment charges and changes in interest rates from those assumed for the agreed tariff would also be treated as pass through items, whether the net impact results in increases or decreases in the tariff. These adjustments would be allowed until financial closure. Thereafter, the tariff would not be renegotiated, but would be adjusted after the commissioning of the power plant on the basis of agreed indices to compensate for changes in the general domestic price level, wages, O&M costs, interest and exchange rates. Changes in the domestic price of fuel would be reflected in the tariff automatically and passed on to WAPDA, which in turn would pass them on to consumers through the fuel surcharge component in WAPDA's tariffs.

4. In accordance with minimum functional specifications for the plant, agreed by LS and WAPDA, a consortium led by Mitsui & Co. of Japan was selected by LS from among four major international companies who bid for its construction. Mitsui was selected because of: (a) its competitive price relative to the other three bidders; (b) its willingness to offer a fixed price turnkey contract, which includes penalties for failure to meet the agreed timetable for the commissioning of the power plant and for the failure of installed equipment to meet the agreed performance criteria; and (c) its past performance in the construction of Shajiao B, a 700 MW coal-fired power station constructed in China under a Build-Operate-Transfer (BOT) arrangement, where the power station was commissioned twelve months ahead of the agreed schedule. Mitsui put together a consortium of equipment suppliers and contractors which consisted of Ishikawajima-Harima Heavy Industries Co. Ltd. (IHI) of Japan for the supply of the boilers, and Toshiba of Japan for the overall engineering and the supply of the turbo-generators. Both firms were involved in the construction of Shajiao power plant in China. Kumagai Gumi of Japan was selected for the civil works, in view of its proven track record in the construction of major civil engineering projects under BOT arrangements, the most important of which was the harbor tunnel crossing in Hong Kong. The consortium entered into a lumpsum fixed price contract for the design and construction of the Hub power plant. Each member of the construction consortium agreed to take several and joint liabilities. Mitsui, Toshiba, and Kumagai Gumi contributed to the cost of project development, which would be considered as part of foreign equity.

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<sup>1/</sup> At an exchange rate of 1 US\$ = Rs 17.5

5. LS selected British Electricity International (BEI) of the U.K. and Canadian Utilities Power (CUP) of Canada to be the operation and maintenance contractors of the power plant. based on their: (a) international reputation and experience; (b) proven ability in the operation, maintenance and management of large thermal power stations; (c) financial ability to provide adequate guarantees for their performance, and for penalties for failure in their performance, and (d) readiness to participate in project development and provide equity. The operators' early involvement in the subproject provided comfort to the lenders, investors, WAPDA and GOP, because of their input in the design of the plant, in the selection of equipment, and in the supervision of implementation to ensure adherence to agreed standards. LS, the construction consortium, BEI and CU Power formed the Hub River Power Group (HRPG) to develop the power plant. The obligations of HRPG were assumed by the Hub Power Company (Hubco) when it was incorporated in Pakistan in April 1989. The expenditures of HRPG have been audited by Arthur Anderson, approved by GOP, capitalized, and included as part of the equity in Hubco

6. In compliance with the guidelines of PSEDP, LS undertook a feasibility study for the power plant in accordance with terms of reference approved by GOP, the Bank and the cofinanciers. The study covered engineering, environmental, economic, financial and legal aspects. It was submitted to GOP and the Bank in November 1988. Since the power plant is to be financed under limited recourse with guarantee from GOP only against sovereign or public sector default by GOP with respect to its agreements with Hubco, a set of agreements covering the obligations of GOP, the sponsors, future investors, the contractors, the senior and subordinated lenders, etc. referred to as the Security Package (SP), was needed to safeguard the interests of all concerned. Negotiation of SP was undertaken by a specially appointed GOP committee, comprised of representatives of the Ministries of Water and Power, Finance, Planning, Communications, Petroleum and Natural Resources, Law, WAPDA and NDFC. On December 17, 1989, the committee submitted its recommendations to GOP's Board of Investments (BOI) for approval. BOI approved the negotiated package, which included all the key agreements and an average tariff of Rs 1.036/kWh (US\$4.9/kWh) for the first 12 years of plant operation and Rs 0.80/kWh (US\$3.8/kWh) for the remaining 18 years<sup>2/</sup>. The BOI approved package allows for adjustments in the tariff to compensate for inflation, changes in financing terms, exchange rate fluctuations, as well as adjustments due to geological and environmental considerations at the site. These adjustments would be negotiated until financial closure. Thereafter, the tariff would be fixed and adjusted through agreed indices incorporated in the power purchase agreement.

7. At the time SP was initialed, site preparation was expected to start by March 31, 1990, two years after LOI was issued and about 20 months after the construction consortium was formed. However, several changes in the membership of LS and the construction consortium delayed project progress. In 1990, Hawker Siddley withdrew from HRPG as a result of changes in the company's corporate strategy. Xenel took over the role of lead project sponsor at that point. Furthermore, Toshiba, Kumagai Gumi and CUP, who had committed significant resources to the development phase of the plant, could not renew their commitment beyond March 31, 1990. Toshiba's inability

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<sup>2/</sup> Based on an exchange rate of Rs 21.05/US\$. HRPG had offered a tariff of Rs 1.065/Kwh (US\$5.1/Kwh), however, it accepted Rs 1.036/Kwh pending finalization of contracts and securing the financing.

to continue was due to a change in corporate policy which shifted its emphasis for future operations away from engineering and project management. Kumagai and CUP's withdrawal was due to other contractual obligations entered into subsequently. This left HRPG with the task of reconstituting its construction consortium.

8. As the operation and maintenance were to be shared between BEI and CU Power, the former agreed to assume full responsibility for future operations of the power plant. As for civil works, Mitsui called for proposals to replace Kumagai Gumi and Campenon Bernard of France was selected after two offers were submitted and reviewed with the bidders. HRPG then asked that the contract for overall engineering and turbine generators, originally assigned to Toshiba, be re-bid in accordance with the Bank's International Competitive Bidding (ICB) procedures. Pre-qualification of firms was completed in June 1990, and the bidding documents were issued to the pre-qualified firms in July 1990. The bidding procedures provided for competition on the basis of price, and required bidders to assume joint and several liabilities for completion of construction and performance of equipment, together with the other members of the construction consortium. These liabilities are limited to a predetermined level based on a framework for sharing completion and performance risks and bonuses. The bids were evaluated in December 1990 by Mitsui assisted by K&M Engineering and Consulting Corporation (K&M) of the USA. The Bank approved Mitsui's selection of Ansaldo GIE of Italy as the lowest evaluated bidder. The reconstitution of the construction consortium and the finalization of the TKC were completed in July 1991. Hubco appointed EBASCO and K&M Engineering to supervise the performance of the turnkey contractor.

9. Following the finalization of the TKC, HRPG held negotiations with GOP in June 1991 to agree on a revised tariff. HRPG and GOP renegotiated the tariff to accommodate changes in the TKC since December 1989, following the reconstitution of the consortium. On July 2, 1991, HRPG and GOP agreed on a tariff of Rs 1.3617 /kWh (US\$5.7/kWh) for the first 12 years of operation of the plant and Rs.0.94/kWh (US\$3.9/kWh) for the remaining 18 years<sup>3/</sup>. The revised tariff adhered to the reopener and indexation provisions that were outlined in the previous Tariff Agreement. It was agreed that this tariff would be revised for the last time shortly before financial closure to reflect changes in the exchange rate, inflation, financial costs, etc. It was further agreed that once the initial payment is made for TKC, its price would be frozen, and further adjustments at financial closure would only cover the terms of financing. The costs associated with the openers for subsoil condition and environment were capped and included in the agreed price for TKC (paras 19-20).

### **III. SUBPROJECT DESCRIPTION**

10. The Hub power plant is a conventional oil-fired steam power station of 1,292 MW (4 X 323 MW) capacity. Operating at full load as designed, it will have a net output of 1200 MW, as 92 MW would be for its own use, for sale to WAPDA. The Hub power subproject includes the construction of a 500-Kv substation, a water desalination plant, a housing colony, an access road of about 7 kilometers to the site from the main route, and a fuel oil tank farm sufficient to store fuel oil for one month of operation.

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3/ At an exchange rate of Rs 24.04/US\$.

11. Fuel oil for the power plant will be supplied by Asia Petroleum Limited (APL), a special purpose private sector company. APL's shareholders include Pakistan State Oil (PSO), the Asia Infrastructure Limited (AIL) of Singapore, VECO Engineers & Constructors of the USA, and the Independent Petroleum Group (IPG) of Kuwait.<sup>4/</sup> APL would be responsible for the design, financing, construction, commissioning, operation and maintenance of the pipeline providing the oil. The pipeline would transport the oil from the Port Qasim Oil Terminal to the power station for a fee. Basic and detailed design for the pipeline was conducted by Fluor Daniel Williams Brothers of the USA, acting as a subcontractor to Enar Petrotech of Pakistan, which is the overall design and engineering consultant. The environmental assessment for the project was conducted by EBASCO of the USA and reviewed and approved by the Bank. Promet Private Limited of Singapore (Promet) would construct the pipeline under a limited recourse financing structure, where it would guarantee a fixed lumpsum price TKC of US\$70 million and assume completion and performance risks. The Fund would provide US\$20 million in subordinated debt under the proposed Project. (Annex 2 give the full details on this subproject).

12. The oil would be imported through the Port Qasim Oil Terminal, currently under construction by Fauji Oil Terminal Company (FOTCO) of Pakistan, whose shareholders are the Fauji Foundation, Canamerican Holdings, the Commonwealth Development Corporation (CDC), the Asian Development Bank (ADB), the Asian Financing and Investment Corporation (AFIC); and domestic investors. The project involves the construction of a tanker berth where tankers would unload the oil, and buffer tanks to store incoming and outgoing oil. From the buffer storage facilities, the oil would be transported via pipeline to several sites, including the Hub power plant. A fixed lumpsum price TKC was awarded to Promet Private Limited of Singapore, which is implementing the project in two phases to be completed in December 1994 and July 1995 respectively. The project is estimated to cost US\$158 million.

13. The Hub power plant would be connected to the national 500-kv network at Jamshoro (see map) through two new single circuit 500 Kv transmission lines of about 200 kilometers each. The transmission lines would be constructed and operated by WAPDA. The design of the lines has been completed and WAPDA has signed a contract with Saudi Cable Company Marketing (SCCM) for detailed design, manufacture and construction of the lines. Total project cost is estimated at US\$82 million in foreign exchange, of which the Islamic Development Bank (IDB) would finance US\$66 million and the Bank would finance the remaining US\$16 million under the Transmission Extension and Reinforcement Project (Loan 3147-PAK). Local costs of Rs. 1,150 million would be financed by WAPDA. The bidding documents for the project, covering conductors, insulators, transformers, and towers have been prepared by WAPDA and approved by the Bank. The two lines are scheduled to be completed by December 31, 1995 and June 30, 1996 respectively.

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<sup>4/</sup> IFC's participation is being considered.



#### **IV. SUBPROJECT COSTS<sup>5/</sup>**

14. The total cost of the Hub Power plant would amount to US\$1,831.6 million, of which US\$1,580.9 million is for base costs and US\$250.7 million is for stand-bys. Project development and implementation costs are US\$1,224.7 million and financing costs of US\$356.2 million. Details of the project's costs are presented in Table 1.

15. **Project Development and Implementation Costs:** These costs of US\$1,224.7 million include pre-financial closure development costs of US\$99.2 million, post financial closure development costs of US\$97.3 million, TKC cost of US\$1,008.5 million and startup O&M costs of US\$19.7 million.

16. Pre-financial closure development costs include the pre-feasibility, the feasibility and detailed engineering, and the environmental screening and impact studies; site acquisition and investigation; legal and financial advisory services required for the Security Package; and the costs associated with Hubco's corporate headquarters in Pakistan. The pre-feasibility and feasibility studies were carried out in accordance with terms of reference agreed with the Bank. The scope of the terms of reference was broader than in the case of public sector projects, to include issues such as the structure of the SP and its agreements, the development of the financial model for the simulation of revenue generation and financial ratios, the procurement for tied and untied funding, the structure for equity and the corporate development, and the staffing plan for Hubco.

17. The Environmental and Social Soundness Assessment (ESSA) study was prepared by EBASCO of the USA. It examined the impact of the project on aquatic resources, socioeconomics, air and water quality. The study describes an operational monitoring program which would be initiated at the start-up of the plant, and which would target aquatic resources, air quality and community relation issues. The study also covers institutional issues relating to employment and public participation. The Bank reviewed the study and concluded that it was thorough and of high quality (paras 73-77).

18. Post financial closure development costs of US\$97.3 million cover construction insurance premiums of US\$27 million, financial hedging costs during the construction period of US\$22.8 million, and Hubco's corporate costs of US\$47.5 million covering construction supervision, procurement expenses, accounting and legal fees and technical services.

19. The price of TKC, amounting to US\$1,008.5 million, represents the major component of the subproject's costs. Signed in July 1991, it is a date-specific, fixed, lump sum price, denominated in ECUs, French Francs, Italian Lire, Japanese Yen, Pakistani Rupees and US Dollars, and was frozen effective December 12, 1992 when the first mobilization payment was made (paras 24-25). This price can only be increased in the event of force majeure requiring additional work or

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<sup>5/</sup>All financial and corporate information in this report is accurate as of the date of issuance of Hubco's Supplementary Information Memorandum of September 1994.

due to owners' variations approved by GOP. It is expected that commissioning of the first unit would take place June 30, 1996, followed by one unit every three months, with the fourth being completed by March 31, 1997.

20. TKC provides for the design, procurement, construction, testing and commissioning of the plant. TKC also provides for penalties for delays, other than those due to force majeure, capped at 10% of the contract value, and penalties for shortfall in capacity and for excess heat rate, each capped at 5% of contract price. The overall cap is at 15% of the contract price. The subcontractors will also provide performance bonds of 10% of the value of each contractor's works, and warranty bonds of 5% to cover each subcontractor's obligations during the warranty period of two years. For earlier than scheduled completion, the subcontractors are entitled to receive bonuses of up to US\$45 million.

21. **Financing Costs:** Financing costs of US\$606.9 million cover interest during construction (IDC), financial fees, escrow reserve accounts and standbys. IDC is US\$204.1 million and fees and financial charges are US\$100.3 (US\$57.1 million for debt and equity commitment and appraisal fees, US\$5.6 million for Bank and JEXIM guarantee fees and US\$37.6 million for ECA insurance premia).

22. Escrow reserve accounts funding of US\$51.8 million covers the Guarantee Reserve Account (GRA), the Rupee Mark-Up Reserve Account (RMRA) and the SACE Collateral Account. GRA funding of US\$19.9 million is required under SP to cover about 13 months of interest due to senior lenders other than the commercial banks covered by the ECAs. This time frame of about 13 months covers the various cure periods agreed with the commercial lenders. The primary reason for GRAs creation is that the ECO/JEXIM guarantee does not cover interest payments exposure of lenders, while ECAs' guarantees do. The escrow account would be financed at the time of financial closure and would remain in place, decreasing over time as the senior debt is retired until it is all repaid. Drawings from GRA would be made only to meet interest payments due on ECO/JEXIM facility. RMRA funding of US\$13.5 million fulfills the same role as the GRA account for senior local debt. It also contains 13 months of interest due to the domestic lenders. SACE's cash collateral account of US\$18.4 million is set up to provide coverage for the 10% of political risk which is not covered by SACE, in order to put it at the same coverage level as ECO/JEXIM.

23. Stand-by accounts amount to US\$250.7 million, representing 25% of TKC price. This ratio is within the reasonable range for projects of this size and complexity to be implemented under limited recourse. They are for contingencies to cover changes in the exchange rates during the disbursement period, variations orders initiated by Hubco and approved by GOP (or vice versa), and cost overruns in the event of delays until adequate financing is arranged. Under SP, increases in the cost of the project attributable to the construction consortium would be absorbed by the contractor and investors through a lower return on equity. Increases in the cost of the project due to GOP or force majeure would be covered by GOP and reflected in the tariff.

Table 1: Project Cost & Summary Financing Plan <sup>a/</sup>

<u>COSTS</u>	<u>US\$ million</u>
<b>I. Project Development &amp; Implementation</b>	
Pre Financial Closure Development Costs	99.2
Post Financial Closure Development Costs	97.3
TKC Cost	1,008.5
Start-Up O&M Costs	19.7
<b><u>Subtotal</u></b>	<b><u>1,224.7</u></b>
<b>II. Financing</b>	
IDC & Other Costs	304.4
Escrow Reserve Accounts	51.8
Stand-bys/Contingencies	250.7
<b><u>Subtotal</u></b>	<b><u>606.9</u></b>
<b>TOTAL COSTS</b>	<b>1,831.60</b>
<b><u>SUMMARY FINANCING PLAN</u></b>	
<b>Equity</b>	
Local	30.0
Foreign	341.5
<b>Debt</b>	
Local	84.1
Foreign	1,319.6
<b>Revenue during Construction</b>	<b>56.4</b>
<b>TOTAL</b>	<b>1,831.6</b>

<sup>a/</sup> Amounts in this table are converted to US\$ at the forecast exchange rates applicable on the forecast drawing dates, not at current exchange rates.

## V. MOBILIZATION FINANCE

24. In order to begin construction of the Hub power plant in December 1992, Hubco arranged for interim funding to pay the turnkey contractors. The mobilization finance amounted to US\$212 million, provided in three tranches. The first tranche of US\$92 million equivalent was provided by Al Rajhi (Saudi Arabia) in the form of an Islamic asset sale and repurchase transaction. This amount funded an advance payment to the turnkey contractor, in order to freeze the price of the contract in December 1992. Hubco refinanced this amount when financial closure was delayed.

25. The second tranche of US\$110 million equivalent was provided by the Fund as an advance on the subordinate loan facility. The mobilization payment was approved by the Board. In conjunction with its approval for the framework of the ECO in October 1991, the Board had

also agreed with the recommendation to disburse mobilization financing to cover the initial and scheduled payments for the first seven months of construction and that TKC price. The financing was provided by the Government of Italy (US\$50 million), the Government of France (US\$30 million) and the Bank (US\$30 million). The Bank disbursed its first payment of US\$16 million on June 30, 1993. Currently, the entire mobilization tranche amount has been disbursed. A third tranche amounting to US\$10 million was provided by NDFC as a senior loan. This loan is to be repaid at financial closure. Finally, the Sponsors also provided an additional US\$26 million of new equity.

## **VI. FINANCING PLAN**

### **Overview**

26. The financing plan for the plant fulfills the guidelines of the Fund, which presently call for a debt:equity ratio of 80:20<sup>6/</sup>. Of the total Hub financing requirements of US\$1,831.6 million, US\$371.5 million would be in equity, US\$1,403.7 million in debt and US\$56.4 million in operating revenue generated before all four units are commissioned. Equity would be injected in Hubco without any guarantees from GOP and without any guarantees for return on investment, except for the right of repatriation of initial investments, dividends, and capital gains after payment of taxes due in Pakistan. As for the debt financing of US\$1,403.7 million, US\$852.6 million would be senior debt to be made available by foreign and local commercial banks and US\$601.5 million would be a subordinated loan to be provided by the Fund. A summary of the financing plan is presented in Table 2 and a more detailed discussion is presented in paras 29-37.

27. The debt financing for the plant is based on the principles of limited recourse, where lenders primarily consider the revenues and assets of the project alone in their decision making process. There are no direct sovereign guarantees, except for risks which lenders are unable to reasonably mitigate.

28. The debt facility involves two broad categories: a) subordinate debt; and b) senior debt. Subordinated debt is comprised of two facilities and senior debt is comprised of four facilities. The subordinated facilities are those of PSEDP I and the financing earmarked for the Hub under the proposed Project (PSEDP II). The senior facilities described below are the ECO/JEXIM facility, the Export Credit Agencies (ECA) facility, the Local Debt facility and the Commonwealth Development Corporation facility.

**ECO/JEXIM Facility:** This facility is a co-guarantee extended to a syndicate of commercial banks by the Bank's Expanded Cofinancing Operation (ECO) and by JEXIM. The ECO facility amounts to US\$205.3 million, and the JEXIM facility

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<sup>6/</sup> The Hub Power Project actually fulfills a higher equity:debt ratio for base financing, almost 25:75, as the cofinanciers required that all equity be drawn down before financial closure. During the implementation of the project, if standbys (only debt) are drawn down, the ration may reach upto 20:80.

amounts to US\$119.8 million<sup>7/</sup>. The ECO/JEXIM facility provides direct cover to the syndicate of commercial banks only against agreed specific sovereign and political risks. Commercial risks are not covered and are borne by the private sector.

Export Credit Agencies Facilities: This US\$335 million facility has three components. The SACE (Italy) facility amounting to US\$199.7 million, the COFACE (France) facility amounting to US\$46.2 million, and the MITI (Japan) facility amounting to US\$89.1 million. The ECAs cover political and sovereign risks in varying degrees and some partially cover commercial risks after commissioning.

Local Commercial Banks: Local commercial bank facilities amount to US\$84.1 million and are extended without guarantees for either political, sovereign or commercial risks.

Commonwealth Development Corporation This facility amounts to US\$38 million and is also extended without guarantees for political, sovereign or commercial risks.

### **Details of Financing Plan**

29. Foreign Equity: The project's sponsors, contractors and investors would contribute US\$371.5 million equivalent in equity, of which the project sponsors' contribution is US\$148.8 million. A guarantee against political force majeure would be provided by MITI for the equity contributions of Mitsui and IHI. Xenel Industries' and National Power International's contributions are not covered by any guarantee. In addition to the sponsors' contributions, US\$90.6 million equivalent has been committed by the Commonwealth Development Corporation (US\$6.1 million), Pakistan Power Limited<sup>8/</sup> (US\$37.7 million), Entergy Pakistan<sup>9/</sup> (US\$37.7 million) and Xenergy<sup>10/</sup> (US\$9.1 million).

30. Morgan Grenfell has been appointed global coordinator for the outstanding equity amount and has assembled a syndicate of institutions to ensure a wide investment base. The syndicate includes Morgan Stanley (US), West Merchant Bank (UK), Jardine Fleming and Bear Stearns International as senior co-lead managers, together with a number of other houses with specific strengths in equity distribution. Deutsche Bank has fully and unconditionally

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<sup>7/</sup> These amounts are at the forecast exchange rates applicable on the forecast drawing date. At December 31, 1993 rates, these amounts would be US\$240 million and US\$120 million respectively.

<sup>8/</sup> Pakistan Power Limited is a special purpose company, incorporated in Hong Kong, to hold the equity investments of a group of Asian investors led by Brian Chang of Singapore.

<sup>9/</sup> Entergy Pakistan Ltd. is a wholly owned subsidiary of Entergy Corporation of the United States.

<sup>10/</sup> Xenergy is a special purpose company incorporated to hold the investments of certain employees and associates of Xenel Industries.

underwritten the outstanding equity amount as of September 1994. Hubco's shares have been offered in the form of Global Depository Receipts (GDRs), which will be listed on the Luxembourg Stock Exchange.

31. Local Equity: US\$30 million equivalent will be offered to investors in Pakistan, where Hubco secured a listing on the Karachi Stock exchange. Jahangir Siddiqui/Bear Stearns, in association with Amin Issa, have been appointed consultants to Hubco to support the local issue. In order to overcome the current weaknesses in the absorptive capacity of the equity market in Pakistan, Morgan Grenfell pre-placed US\$25 million of equity with the Overseas Economic Cooperation Fund of Japan (OECF). OECF sub-underwrote the equity and will hold it during the construction period, then it will gradually divest itself of it. Small local investors can then acquire this equity. This would broaden the ownership base of the plant and provide local investors with the opportunity to hold equity.

32. Foreign Debt: Foreign debt of US\$1,319.6 million is divided into US\$718.1 million of senior debt and US\$601.5 million of subordinate debt. The senior debt is mainly composed of the ECO/JEXIM facility (US\$325.1 million) and ECA facilities (US\$335 million). CDC is providing the remaining US\$38 million. The ECAs guarantees cover varying degrees of political and commercial risks, as presented below compared to the ECO/JEXIM guarantee (Table 3).

Table 2: Financing Plan (US\$ million)<sup>11/</sup>

<b><u>EQUITY</u></b>	Base	Standby	Total
<b>Sponsors</b>			
Xenel Industries	40.0		40.0
National Power International	90.0		90.0
Mitsui, IHI, K&M, & others	18.8		18.8
<b>Other Investors</b>			
Commonwealth Devp Corp	6.1		6.1
Pakistan Power Limited	37.7		37.7
Entergy Pakistan	37.7		37.7
Xenergy	9.1		9.1
Morgan Grenfell Syndication	102.1		102.1
<b>Subtotal Foreign Equity</b>	<b>341.5</b>		<b>341.5</b>
<b><u>Local Equity</u></b>			
Local Institutions/OECF	<u>30.0</u>		<u>30.0</u>
<b>Total Equity</b>	<b><u>371.5</u></b>		<b><u>371.5</u></b>
<b><u>DEBT</u></b>			
<b>Foreign Debt</b>			
<b>Senior Debt</b>			
World Bank ECO Guaranteed Facility	185.3 <sup>12/</sup>	40.0	205.3
JEXIM Guaranteed Facility	99.8	20.0	119.8
SACE Guaranteed Facility	199.7		199.7
MITI Guaranteed Facility	89.1		89.1
COFACE Guaranteed Facility	46.2		46.2
Commonwealth Dev. Corporation	38.0		38.0
<b>Subordinated Debt</b>			
PSEDP I	328.4	48.8	377.2
PSEDP II	107.4	116.9	224.3
<b>Subtotal Foreign Debt</b>	<b>1,093.9</b>	<b>225.7</b>	<b>1,319.6</b>
<b>Local Debt</b>			
Local Financial Institutions	<u>59.1</u>	<u>25.0</u>	<u>84.1</u>
<b>Total Debt</b>	<b>1,153.0</b>	<b>250.7</b>	<b>1,403.7</b>
Revenue during Construction	56.4		56.4
<b>TOTAL FINANCING</b>	<b>1,580.9</b>	<b>250.7</b>	<b>1,831.6</b>

<sup>11/</sup> Amounts for base financing are converted to US\$ at the forecast exchange rates applicable on the forecast drawing date, while amounts for standby financing are converted at December 31, 1993 exchange rates.

<sup>12/</sup> In December 31, 1993 exchange rates, the ECO guaranteed facility is equal to US\$240 million, of which US\$40 million is standbys, while the JEXIM guaranteed facility is US\$120 million equivalent, of which 20 million is standbys.

Table 3: Terms of Coverage				
Risk	ECO/JEXIM	COFACE	ECU	MITI
Political Default: Non payment by GOP of its obligations and WAPDA's, PSO's and SBP's	100%	95%	90%	95%
Commercial Default		60%*	80%*	
Political Default post Commercial Default	100%	60%*	80%*	

\* Post Completion

**ECA Facilities:** The ECAs of Japan (MITI/EID), France (COFACE), and Italy (SACE) would provide export credit guarantees totaling US\$335 million to commercial banks who would finance suppliers from their respective countries. MITI would guarantee US\$89.1 million equivalent toward the contract awarded to Mitsui/IHI for the boilers, COFACE would guarantee US\$46.2 million equivalent toward the contract awarded to Campenon Bernard for civil works, and SACE would guarantee US\$199.7 million equivalent toward the contract awarded to Ansaldo for turbogenerators.

**ECO/JEXIM Facility:** The Bank and JEXIM would provide guarantees for up to US\$360<sup>13/</sup> million to a syndicate of commercial banks which will provide senior debt financing to Hubco. The syndicate consists of Citibank, Credit Lyonnais, Sakura Bank, Bank of Tokyo and NatWest, which have been appointed by Hubco as the Arranger banks for the facility. Deutsche Bank has also been awarded the position of co-arranger due to its contribution of US\$50 million. These banks negotiated and finalized the Guarantee Agreements with the Bank and JEXIM, (Schedule A) setting out the details of the political risks coverage.

33. The arranger banks have agreed with the Bank and Hubco on a strategy for syndicating the ECO/JEXIM facility and the ECAs facilities together as a package. Market sounding for US\$692 million equivalent was launched in August 1993. Financial institutions in Europe, Japan, North America and the Middle East were contacted. The syndication has been oversubscribed and the underwriting became unconditional on September 19, 1994. Names of the financial institutions and the amounts committed are presented in Schedule D to this annex.

34. **Subordinate Debt:** Subordinate financing will be provided by the Fund, through PSEDP I and PSEDP II. Of the US\$377.2 million financing to be provided through PSEDP I, US\$328.4 million equivalent would be for base financing and US\$48.8 million for standby financing. PSEDP II would provide an additional US\$224.3 million in subordinated debt, of which US\$107.4 would be for base financing and US\$116.9 million for standbys. This would bring the Fund's overall financing to US\$601.5 million, representing 33% of the total cost of the Hub Power subproject.

<sup>13/</sup> This facility is broken down as follows for the ECO guaranteed portion: US\$163 million (of which US\$40 million is standby), ECU 29 million, FF 157 million and ¥2 billion. The JEXIM guaranteed portion is ¥13.4 billion.



35. **Local Debt:** Local debt of US\$84.1 million equivalent would be raised in the local market. Of this amount, US\$59.1 million would finance base costs and US\$25 million would be for stand-bys. NDFC is managing a consortium to raise the facility amount and has already received expressions of interest for a large portion. NDFC was chosen because of its experience in raising financing for projects in the local markets and its extensive knowledge of Hub through its role as administrator of the Fund. The State Bank of Pakistan (SBP) has agreed to authorize the local commercial banks to extend the required financing to the Hub project within the credit ceiling set under the Bank's Medium Term Assistance Program.

## VII. PROCUREMENT & DISBURSEMENTS

36. **Procurement:** Procurement of goods, works and services to be financed by the proposed loan would be in accordance with Fund procurement guidelines, which stipulate that goods, works and services financed from the proceeds of loans made by the Bank would be in accordance with Bank guidelines. Fund loans will be used for eligible construction costs and insurance during construction. Fund financing will also be used to pay rolled-up interest during construction, stand-bys, Fund and ECO/JEXIM guarantee fees. Details of the procurement arrangements for the components financed under the Fund loans are presented in Table 4 below, which includes the procurement arrangements for the entire subproject costs<sup>14/</sup>.

**Table 4: Summary of Procurement Arrangements for the Hub Power Subproject**

Project Component	ICB	LIB	Others	NBF	Total
Turnkey Construction Contract	96 (PSEDF 1)	30 (PSEDF 2)		883	1,009
Insurance			12 (PSEDF 1) <sup>15/</sup> 8 (PSEDF 2)	7	27
Other Development Costs				169	169
Start-Up O&M Costs				20	20
Interest & other Charges during Construction			12 (PSEDF 1) 16 (PSEDF 2)		28
Other Financing Costs <sup>16/</sup>				328	328
Standby Financing			24 (PSEDF 1) 60 (PSEDF 2)	167	251

<sup>14/</sup> PSEDF I loan will be modified so as to have the same terms as PSEDF II loan, allowing JEXIM and the Bank to disburse equally against all expenditures.

<sup>15/</sup> Procured through usual competitive process in the international insurance market.

<sup>16/</sup> Including Escrow Reserve Accounts.

37. Disbursements: The Fund loans would be disbursed against expenditures in accordance with Fund disbursement guidelines. Disbursements from PSED P I and II are presented in Table 5.

FY	1994	1995	1996	1997	Total
<b>PSED P I</b>					
Bank	49	43	25	4	121
JEXIM		31	44	46	121
USAID		3	4	3	10
Italy	50				50
France	28				28
U.K.	—	—	—	—	—
<b>Total</b>	<b>127</b>	<b>67</b>	<b>87</b>	<b>48</b>	<b>330</b>
<b>PSED P II</b>					
Bank		19	35		54
JEXIM		19	35		54
France					
<b>Total</b>		<b>64</b>	<b>73</b>		<b>108</b>

a/ These disbursements are only for base financing and do not include standby funding, which would be available from the first day of drawdowns. The standby funding, expressed in December 31, 1993 exchange rates, is as follows: US\$49 million from PSED P I (US\$24.5 million from JEXIM and US\$24.5 million from the Bank) and US\$117 million from PSED P II (US\$60.5 million from the Bank and US\$56.5 million from JEXIM).

b/ Amounts are converted to US\$ at the forecast exchange rate at forecast disbursement dates.

### VIII. SECURITY PACKAGE

38. The proposed ECO/JEXIM guarantee is an intrinsic element in the overall SP framework. The SP is a set of interlinked agreements and provisions designed to preserve the interests of the lenders, investors, GOP and its entities. It is a substitute for a direct sovereign guarantee and was structured by GOP with the assistance of the Bank and in consultation with the international financial community.

39. Unlike previous guarantees which the Bank has provided in respect of principal debt service payment defaults under commercial bank loan syndications, the ECO/JEXIM guarantee is intimately linked to the performance of GOP and other public sector entities under SP contractual agreements. As the financing for the subproject is based on the principles of limited recourse, the lenders would assume full completion and operational risks and look primarily to the expected cash flow/operating revenues of the subproject as the basis for Hubco's servicing of its debt.

40. The distinguishing feature in this subproject is that WAPDA, a public sector entity, is the sole purchaser of Hubco's power offtake. In addition, Hubco's ability to service its foreign commercial bank lenders is dependent on at least two other important factors. First, the fulfillment by GOP of its undertakings to provide contingency funding, Special Temporary Funding, Deficit Funding or Termination Payments, in the event of non-performance by other public sector entities under SP. Second, the fulfillment by State Bank of Pakistan (SBP) of its obligation to make available, under the Foreign Exchange Risk Insurance scheme (FERI), the required foreign exchange to service debt upon the delivery of local currency funds by Hubco. These factors represent risks which have been addressed through the design of SP.

41. The agreements comprising SP have been finalized following review, revision, and approval by all parties involved, including GOP, the Bank, the cofinanciers and Hubco. Signature and effectiveness of all agreements under SP would be required before financial closure. A brief description of the three major agreements, the Implementation Agreement (IA), the Power Purchase Agreement (PPA) and the Fuel Supply Agreement (FSA) is provided below.

42. Implementation Agreement (IA): The IA provides the framework under which Hubco would implement the Hub power project, by setting out the fundamental obligations of Hubco and GOP. In summary, the IA grants Hubco the exclusive right to design, construct and operate the plant, subject to GOP's approval of project agreements. GOP undertakes to generally support the project, by promoting Hubco's applications for the specified consents required to implement the project. Under the IA, Hubco is exempt from custom duties on plant and equipment and from corporate income taxes, and non-resident lenders are exempt from taxes on their interest earnings. Furthermore, GOP ensures the availability and free transfer of foreign exchange for the project, and ensures that the State Bank of Pakistan (SBP) makes available Foreign Exchange Risk Insurance (FERI) in this respect. GOP also guarantees the obligations of WAPDA under the Power Purchase Agreement (para 47), of PSO under the Fuel Supply Agreement (para 48), and of SBP as provider of the Foreign Exchange Risk Insurance (paras 63-66).

43. The IA can be terminated by either Hubco or GOP in certain cases and GOP may be obligated to pay Hubco a termination amount. GOP is also obligated to indemnify the lenders if their security is reduced, following a commercial default by Hubco, as a result of specific events taking place. Under the IA, Hubco may also require GOP to pay Special Temporary Funding (STF) if certain force majeure events take place. STF would be payable in the amount necessary to compensate Hubco for loss of revenue and for the cost of restoring the plant to its previous condition. GOP may also be required to pay Deficit Funding to Hubco if Hubco is unable to meet penalty payments due to WAPDA under the PPA. Deficit Funding is repayable by Hubco, with interest, when Hubco is capable of doing so. The IA was signed on August 3, 1992 and amended on November 16, 1993.

44. Power Purchase Agreement (PPA): Under the PPA, Hubco is required to make available to WAPDA minimum levels of Available Capacity. WAPDA has the right to despatch the plant, thus instructing Hubco to generate and deliver electricity to the WAPDA Grid up to the available capacity of the plant. In return, WAPDA is obligated to pay a tariff to Hubco, regardless of whether the plant is despatched or not. A more detailed description of the tariff arrangements is provided in paras 58-60. Under the PPA, Hubco may be required to pay penalties for liquidated damages to WAPDA in the following cases: delays in completion, a shortfall in net capacity of the plant, forced outages and failure to comply with despatch requests. As stated above, the terms of the IA stipulate that, in certain cases, GOP may provide Deficit Funding to Hubco so that the company can pay these penalties. Hubco may also be

entitled to a bonus if it exceeds 65% of the maximum available capacity. The PPA was signed on August 3, 1992 and amended on November 16, 1993. A revised Schedule 6 to the PPA on the indexation of the tariff was agreed on November 18, 1993.

45. Fuel Supply Agreement (FSA): Under the FSA, PSO undertakes to construct the pipeline and supply the fuel oil to the plant. The FSA is currently being amended to reflect the developments in the structure of the project into a BOO project implemented by the private sector company Asia Petroleum Limited (APL). Annex 2 details the Port Qasim - Khalifa Point Fuel Oil Pipeline subproject.

#### **IX. THE EXPANDED COFINANCING OPERATION (ECO) Guarantee**

46. The objective of the proposed ECO guarantee is to assist Pakistan in the implementation of its strategy for enhancing the role of PS in energy development by mobilizing financing from the international financial markets on favorable terms.

##### **Structure for the Proposed ECO Guarantee**

47. The proposed ECO guarantee would guarantee 100% of principal in the event of debt service default on the loan, if the default is due to the failure of GOP to fulfill its obligations under the IA or to the occurrence of certain other specified events. The Bank would guarantee up to US\$240 million equivalent of an international syndicated loan of US\$360 million equivalent, while JEXIM would guarantee the remaining US\$120. The guarantee was negotiated between the Bank, JEXIM and the commercial banks syndicate. The agreed document was signed in September 1994 and a summary is presented in Schedule A. The Memorandum of the President (MOP) for the ECO guarantee, detailing this coverage, will be presented to the Executive Directors in concurrence with this loan.

##### **JEXIM Co-Guarantee**

48. JEXIM's guarantee would be provided in conjunction with the Bank guarantee. The guarantees from JEXIM and the Bank would apply to separate loans and would be governed by each institution's respective policies, under terms and conditions applicable to its guarantee operations. Each institution would enter into separate agreements with the commercial banks regarding their respective guarantees. In addition, JEXIM and the Bank would enter into separate indemnity agreements with GOP. Repayment terms on the tranches would be identical. The JEXIM guarantee would follow the structure of the Bank's guarantee.

#### **X. HUBCO CORPORATE DEVELOPMENT**

49. When the Hub Power Complex is commissioned, Hubco would become the first power generation utility in Pakistan to be wholly privately owned and operated. Its performance would provide a benchmark for evaluating the performances of WAPDA and KESC in terms of staff deployment and development, corporate organization and management, operations and maintenance practices, financial management and control, and development of new facilities.

50. The development of Hubco into a utility corresponds with the progress in the implementation of the power station. Since the financing for the power plant is secured under limited recourse, SP arrangements dictated, to a large extent, the evolution of the corporate structure of Hubco. After the issuance of LOI, the sponsors undertook the preparation of the

feasibility study, the selection of the turnkey contractor, and the negotiation of subsequent agreements. Following the creation of HRPG, a managing director was appointed to manage the relationship of the Group with GOP, the Bank, and the international financial community. K&M Engineering was appointed to support HRPG in the area of engineering, and Morgan Grenfell continued its support in the area of finance.

51. The staffing of HRPG evolved with the appointment of a Board comprised of the shareholders, the chief executive, and chief financial officer. Staff from National Power International and K&M have been seconded to HRPG, assisted by consultants with international experience whenever needed. The structure developed for HRPG was intended to be a foundation for the development of Hubco. The initialling of agreements with GOP and the positive response of the international financial community in expressing willingness to finance under limited recourse, was the signal for HRPG to start the development of Hubco. As a first step, and in compliance with the guidelines of the Fund, Hubco was incorporated in Pakistan in August 1991 under the Pakistan Companies Ordinance of 1984. An interim Board of Directors was appointed and a search for a permanent CEO was initiated. A corporate development plan for Hubco was prepared and submitted to the Bank and GOP for review.

52. The existing Board of Directors has eleven members, which will increase to sixteen at financial closure. Of these, three directors would be appointed pursuant to Hubco's contractual obligations<sup>17/</sup>. The remaining seats would be held by the Chief Executive and twelve elected directors representing the interests of the shareholders. Of these, eight would represent National Power and Xenel Industries, one Mistui/IHI<sup>18/</sup>, one Morgan Grenfell, one Pakistan Power and one Entergy. Hubco's management plan calls for the Board of Directors to direct the affairs of the company and delegate day-to-day management responsibility to the CEO. The CEO, as well as key personnel to senior management positions, has been appointed. The company would be managed by an Operations Committee chaired by the CEO, and would have six departments with defined responsibilities (Schedule B).

53. National Power, a sponsoring investor, is the largest power generating company in the UK and also operates their own thermal power plants in Europe. It will be the operator of the plant and has signed a 12-year O&M Agreement to this effect with Hubco. It also has a proposal for Support Services Agreement (SSA) to provide assistance on any aspect of Hubco's activities at the request of the CEO. Under this agreement, National Power is committed to respond to such requests. It has already made available the services of its Head of Construction and is providing advice on financial and management related issues during the construction period. The SSA extends for 6 years and can be renewed for an additional 6 years at Hubco's request.

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<sup>17/</sup> The three directors are from : CDC, Government of Balochistan and NDFC. Hubco's Articles of Association currently provide for a maximum of four directors to be appointed pursuant to contractual obligations.

<sup>18/</sup> This director would be a representative of OECF, in agreement with Mitsui/IHI.

**XI. FORECAST OF HUBCO'S FINANCIAL PERFORMANCE**

54. **Financial Objectives and Projected Financial Results:** Hubco's objective is to become a financially viable utility, and to generate sufficient revenues from the sale of electricity to: cover all operations and maintenance costs, including depreciation and financial charges; provide a competitive return on equity; and generate an adequate cash flow to cover its debt service obligations, meet its working capital needs, and build up reserves over time to reduce its dependence on elaborate security arrangements. Projections of Hubco's financial results are summarized in Table 6 below and shown in more detailed in Schedule C.

55. Hubco revenues would be from its sale of electricity to WAPDA<sup>19/</sup>. Based on the Power Purchase Agreement (PPA), Hubco is required to make available to WAPDA minimum levels of available plant capacity. WAPDA has the right to instruct Hubco to generate and deliver electricity to WAPDA's Grid, up to the available capacity of the plant. In return, WAPDA is obligated to pay a tariff to Hubco whether or not the plant is despatched.

**Table 6: Hubco's Projected Financial Results (Millions of Rupees) <sup>a/</sup>**

December 31,	1996	1997	1998	1999	2000
Sales	5,576	2,1717	21,582	19,981	20,669
Operating Expenses	(1,449)	(6,408)	(7,237)	(7,585)	(7,937)
<b>Operating Income</b>	<b>4,127</b>	<b>15,309</b>	<b>14,345</b>	<b>12,396</b>	<b>12,732</b>
<b>EBIT<sup>b/</sup></b>	<b>4,147</b>	<b>14,164</b>	<b>13,557</b>	<b>11,411</b>	<b>11,740</b>
Interest Expense	0	(8,260)	(5,459)	(4,994)	(4,544)
<b>Net Income</b>	<b>4,147</b>	<b>5,904</b>	<b>8,098</b>	<b>6,417</b>	<b>7,196</b>
<b>Net Dividend Payable</b>	<b>0</b>	<b>(5,512)</b>	<b>(6,612)</b>	<b>(5,081)</b>	<b>(5,808)</b>
Investors IRR (project life)	17.3% <sup>c/</sup>				
Loan Life Cover Ratio (Senior Debt)	-	3.21	3.28	3.46	3.63

<sup>a/</sup> The financial projections are based on 1994 prices indexed for inflation (domestic and foreign) and depreciation of the Rupee.

<sup>b/</sup> Earnings before interest and taxes.

<sup>c/</sup> Return to offshore (non-sponsors) and domestic investors in real terms. The return is 21.4% in nominal terms.

56. **Tariff:** The PPA gives WAPDA complete flexibility in its despatch of the plant, in order to enable it to meet the requirements of the WAPDA Grid. The structure of the tariff is consistent with this flexibility. The tariff is designed to provide Hubco with sufficient revenue to meet its ongoing costs and to provide a return to its shareholders, regardless of the actual level of electricity purchased by WAPDA.

57. An Indicative Tariff was agreed with WAPDA in October 1993. This tariff was based on the assumption that WAPDA would purchase 6,791 GWh of electricity per year,

<sup>19/</sup> Projected average tariff for the first 10 years of operation is 5.7 ¢/Kwh in real terms.

corresponding to a 64.6% Net Capacity Factor of a 1,200 MW Net Capacity. The Indicative Tariff will be adjusted to produce a "Reference Tariff" at financial closure. The adjustments would reflect changes in interest rates and financing costs and increases in the amount of Hubco's equity. The Reference Tariff will be adjusted after the completion of first unit and will be indexed annually thereafter to reflect changes in costs faced by Hubco which are outside its control. These costs include the cost of fuel oil, and changes in interest rates, exchange rates and inflation affecting fixed and variable costs.

58. The tariff is composed of four elements:

- (a) *Capacity Purchase Price* is a payment for the Net Capacity and is not dependent on actual electricity purchased by WAPDA. This price covers debt service and other financing costs, insurance costs, FERI costs, Hubco's fixed overhead and O&M costs and a rate of return on Hubco's equity;
- (b) *Energy Purchase Price* is a variable component, designed to mainly cover fuel costs and variable O&M costs;
- (c) *Supplemental Charges* cover various items, including pass-through items reimbursable by WAPDA; and
- (d) *Supplemental Tariff* is a payment by WAPDA to enable Hubco to meet the cost of debt service due to GOP in respect of Special Temporary Funding (STF).

59. The Hub power plant is expected to have a fuel efficiency of 2,210 Kcal/kWh, which should be attainable with proper operations and maintenance. In addition, a plant betterment allowance has been added to the operating costs of the facility to cover the costs associated with the maintenance of the plant and to maintain its installed capacity at 1,292 MW throughout its forecast life of 30 years. This prevents Hubco from derating the installed plant capacity on a theoretical basis and claiming bonuses for exceeding it in practice. Conversely, it prevents Hubco from attributing any failure to perform to a deterioration of plant efficiency because of wear and tear.

60. During the operating period, foreign exchange risk arises because the tariff revenue is denominated in Rupees, while most payments are made in foreign currencies. This risk is addressed through tariff indexation as discussed above and through the Foreign Exchange Risk Insurance (FERI) scheme with respect to debt service payments.

61. Foreign Exchange Risk Insurance: Hubco will be provided with foreign exchange cover for its foreign currency denominated loans under the State Bank of Pakistan's (SBP) FERI scheme. FERI is required by GOP of all private sector projects. Under this scheme, SBP provides forward exchange cover for both principal and interest over the life of qualifying foreign currency loans. There are no restrictions by SBP on interest rate, margins or fees.

62. Exchange risk cover for each loan is provided from the date of its disbursement. On each disbursement, the foreign currency amount of the loan (or tranche of loan) is fixed in Rupees at the spot selling rate for that disbursement date. A weighted average rate, called the Insured Rupee Rate, is calculated for the loan as a whole.

63. On due dates for payment, Hubco makes available to a Remittance Bank the Rupee equivalent amount of interest and principal due, converted at the then current spot rate. The Remittance Bank would use the Rupees to purchase the foreign currency needed to meet the

payment to the relevant lenders. If the spot rate was higher than the Insured Rupee rate for the loan (i.e. the Rupee has depreciated in value), Hubco will be paid the difference by SBP within a few days. If the Rupee has appreciated, Hubco will pay the difference to the SBP.

64. SBP charges fees for FERI based on the principal amount covered and the currency involved. Fees are fixed for the life of the loan at the rate prevailing when Hubco's application for FERI is received by SBP. Currently, the per annum fees are as follows: US\$ at 8.20%, Sterling at 7.58%, ¥ at 10.0%, French Francs at 7.50%, Italian Lira at 5.50% and ECU at 8.15%.

65. Debt Service Coverage: The forecast net revenues and expenditures for the subproject show that net revenues for each year would result in a debt service coverage ratio above 1.5 for the total debt, and on senior debt above 2.0. By June 30, 2005, the senior debt would have been retired, with debt service continuing on the subordinated PSEDP I and PSEDP II loans through December 31, 2015. Should Hubco be unable to maintain the full capacity utilization of 60% (6,791 GWh per year), and instead operate the plant at 50% (5,659 GWh per year), debt service would continue to be covered at nearly the same levels as at full output since the reduction in revenue from reduced output would be absorbed through a reduction in shareholders' returns.

66. Annual Accounts and Audits: Hubco has appointed a firm of accountants to keep its accounts during construction, commissioning and operation of the plant in accordance with generally accepted utility accounting practice. As required under the Pakistan Companies Ordinance of 1984, Hubco's annual accounts would be audited within six months of the close of the year by independent auditors.

## **XII. ENVIRONMENTAL ISSUES**

67. Environmental and social soundness assessment of the power plant was initiated in 1987 in compliance with the environmental procedures of GOP and the Bank. Following the preparation of an environmental screening study of the proposed site and a series of alternative sites, a two phase approach was adopted for preparation of the environmental assessment. Phase I evaluated the environmental acceptability of the proposed subproject based on available data about the site, and Phase II provided supplemental information based on actual monitoring at the site to support final design of the project. This approach was adopted to allow for phased expenditure on feasibility studies in the context of the private sector power program and to provide adequate time for the installation of a meteorological and air quality monitoring tower in the project area by WAPDA.

68. The first phase environmental and social soundness assessment (ESSA) for the proposed subproject was submitted in May 1990. Review of the document indicated that the design of the proposed project was in compliance with Bank environmental guidelines and would not result in significant adverse environmental impacts. At this time, a work program was established for more detailed studies based on the latest site information which would be conducted to support finalization of the design of the plant.

69. ESSA was carried out on the basis of an A project, because the plant will be the first major power plant in Pakistan to be privately owned and operated, and because of the fragile nature of the environment at the site. ESSA was carried out by EBASCO Environmental (USA) and approved by GOP under its regulations. The report was reviewed by the Bank and found to be satisfactory and in accordance with the ODs complying with all environmental policies and



procedures. The subproject will be constructed and operated using the latest technological practices and is expected to cause minimum disturbance to the environment.

70. The subproject site is a green field location consisting of approximately 1,400 acres located at the confluence of the Hub River and the Arabian Sea, in Southern Balochistan Province, 40 kilometers west of Karachi, Pakistan. Alternative locations had been considered but the selected site was chosen because it requires the least amount of land, affects no local people and offers minimum impact on the natural environment. The area around the site is generally level with small hills, arid, devoid of vegetation and population. Aquatic resources at the mouth of the Hub are limited because the Hub Dam located upstream makes the area around the plant a shallow tidal basin.

### **Key Environmental Issues**

71. Water Quality: The only water discharge from the plant during operation will be cooling water (49 m<sup>3</sup>/sec at maximum power output) which meets local and Bank water quality guidelines. To assure this, a computer program was used to simulate the impacts of both thermal and chlorine pollution on the receiving body of water. A monitoring program will also be put into place to determine concentrations of chlorine, heavy metals, oils, grease, suspended solids and several other parameters. During construction, proper sedimentation and erosion controls will be put into place and provisions will be made for sanitary wastes both during construction and operation.

72. Air Quality: An assessment of air quality impact was carried out to examine the impact of SO<sub>2</sub>, NO<sub>2</sub> and particulate using two well established air quality models (USEPA approved). Emissions from the plant will meet all Pakistani and Bank guidelines. The remaining issues to be resolved are tentative plans to build two other thermal power plants nearby, one by WAPDA and the other by the Fauji Electric Power Company. The impact of these combined sources will exceed 24 hour and annual guidelines for SO<sub>2</sub>. If these plants are built, a combined strategy for SO<sub>2</sub> reduction will need to be developed.

73. Social Issues: Since there are no residents at the site, no resettlement will need to take place. Some 1,400 acres have been purchased for the project with grazing and other agricultural activities allowed to continue outside the property boundaries. No sites of archeological or historic interest have been identified at or near the proposed site. During construction, a camp accommodating some 1,400 workers will be provided although during peak times some 3,000 workers will be at the site.

74. Regarding public participation, meetings were held with several NGOs to address preliminary environmental findings based on the earlier studies. These centered around such issues as the nearby turtle population, impact on fishing and long term prospects for employment at the plant.

### **Monitoring and Reporting**

75. Satisfactory procedures for monitoring, evaluating, and reporting have been agreed with Hubco. Major monitoring of the aquatic resources will take place over a three year period paying particular attention to thermal discharges. Additional monitoring will take place of ambient air quality as well as continuous emissions monitoring of SO<sub>2</sub>, NO<sub>x</sub> and opacity. A community relations officer will be assigned to the project to monitor and discuss issues which affect local populations. In addition, regular meetings will be scheduled with communities to determine concerns affecting plant operations.

**PAKISTAN**

**HUB POWER PROJECT**

**EXPANDED COFINANCING OPERATION (ECO)**  
**SUMMARY OF TERMS OF THE GUARANTEE**

**Borrower:** The Hub Power Company Limited (HUBCO).

**Guarantor:** International Bank for Reconstruction and Development (World Bank). Arrangers: The Bank of Tokyo, Ltd. The Sakura Bank, Citibank International Plc., Credit Lyonnais, S.A., National Westminster Bank Plc.

**Lenders:** A syndicate of commercial banks.

**Amount:** US\$240 million equivalent, consisting of two facilities:

- (i) ECO-guaranteed base credit facility of US\$200 million equivalent; and
- (ii) ECO-guaranteed standby credit facility of US\$40 million.

**Currencies:**

ECO base credit facility: U.S. Dollars, Japanese Yen, French Francs and ECU of:

- (i) ECU 29 million;
- (ii) French Francs 157 million;
- (iii) Japanese Yen 2,000 million; and
- (iv) U.S. Dollars 123 million

ECO standby credit facility: U. S. Dollars

**Use of Proceeds:**

To finance part of the overall cost of the power plant, including design and construction costs, financing costs and interest during construction. The balance of the costs will be financed by four syndicates of commercial banks covered by the Export Import Bank of Japan and the Export Credit Agencies of Italy (SACE), France (COFACE) and Japan (MITI); other senior debt, subordinated debt and equity. Subordinate debt is to be provided by the Fund under PSEDP I (Ln. 2982-PAK) and the replenishment loan under the proposed PSEDP II loan to be presented to the Executive Directors in concurrence with this ECO. The amounts allocated to Hub would be US\$377 million and US\$195 million respectively.

**Procurement:**

The equipment, materials and services under the Turnkey Construction Contract for the power plant which have been or will be awarded through a competitive process meeting the requirements of economy and efficiency.

**Drawdown:**

Disbursements under the Loan will be for eligible expenditures for the power plant. HUBCO will maintain special disbursement accounts with Citibank N.A. or The Bank of Tokyo, Ltd. in Pakistan, denominated in the currencies of the Loan, into which the proceeds of the Loan (other than disbursements to be paid directly to third parties and disbursements needed to maintain the required balance on reserve accounts) will be deposited monthly, based on the projected expenditure requirement. HUBCO will provide the World Bank with periodic reports on the use of funds for expenditures for the power plant, including yearly audited financial statements, accompanied by a separate opinion of auditors on whether the expenditure statement supports the withdrawals from the special disbursement account.

**Availability Period:**

The earlier of March 31, 1998 or six months after the project completion date.

**Repayment:**

The loan will be repayable in 16 equal semi-annual installments falling due on January 10 and July 10 in each year, commencing on the first interest payment date after the end of the Availability Period, provided that the final maturity date will be no later than January 10, 2006.

**Interest Rate:**

**ECO base credit facility:**

- (i) Six month London Interbank Overnight Lending Rate (LIBOR) for the relevant currency plus 2% per annum until the 8th anniversary of the date of the loan agreement; and thereafter.
- (ii) Six month LIBOR plus 2.25%.

**ECO standby facility:**

Six month LIBOR plus 2.5% until the 8th anniversary of the date of the loan agreement, and thereafter six month LIBOR plus 2.75%.

The interest rate per annum on the ECO Facilities will be reduced by 0.25% when HUBCO's annual debt service coverage ratio is 2:1 or greater.

**Conditions Precedent  
to Effectiveness:**

The ECO Facility Agreement and the ECO Guarantee will be effective only when *inter alia*:

- (i) the other debt financing for the Plant is underwritten and all conditions precedent for the utilization thereof have been fulfilled;
- (ii) the equity standby financing for the Plant has been fully subscribed and paid for (or where standby equity is to be subscribed or paid for subsequently, letters of credit or guarantees satisfactory to the Lenders are in place to assure that such equity will be subscribed for when required);
- (iii) all agreements required in connection with the construction and operation of the Plant (including but not limited to the Implementation Agreement, the Power Purchase Agreement, the Fuel Supply Agreement, the Construction Contract, the O&M Agreement, Security Trust Deed, the GOP Guarantee and the Exchange Risk Insurance Letters), have been executed and are effective; and
- (iv) HUBCO has been capitalized and staffed in a manner satisfactory to the Lenders.

**Guarantee Provisions:**

**Scope:**

- (a) The ECO Guarantee will be provided by the World Bank in parallel with the JEXIM Guarantee by JEXIM in the initial ratio of 2:1. The ECO Guarantee and the JEXIM Guarantee will be callable on a *pari passu* basis.
- (b) The ECO Guarantee will cover the principal payments due under the Loan and remaining unpaid. Interest due to the Lenders on the occurrence of risks covered by the ECO Guarantee is covered by the ECO Guarantee Reserve Accounts (summarized below).
- (c) The ECO Lenders' Agent Bank may (and, if so instructed by the Majority Lenders, shall) call the ECO Guarantee upon the occurrence of the following specified events:
  - (i) HUBCO has failed to make a principal payment or a portion thereof when due and payable to the ECO Lenders either on a scheduled payment date or on acceleration or on voluntary or mandatory prepayment; and
  - (ii) HUBCO has failed to make such payments for reasons which include (directly or indirectly) a Guarantee Event (as described below).

**Guarantee Events:** A claim may be made under the ECO Guarantee in the following circumstances, if they result in a failure by HUBCO to make a payment of principal under the Loan:

- (i) the Government has failed to pay HUBCO any amount due under the Implementation Agreement or under the Government's guarantee issued thereunder of the obligations of PSO under the Fuel Supply Agreement, WAPDA under the Power Purchase Agreement, and the State Bank of Pakistan under the Foreign Exchange Risk Insurance Scheme (other than any amount payable by the Government as the result of the failure of PSO to deliver fuel oil to HUBCO due to certain oil-related foreign political events). Such payment obligations are summarized below;
- (ii) the Government through the State Bank of Pakistan has failed to make available the necessary foreign exchange in accordance with its agreement under the Foreign Exchange Risk Insurance Scheme;
- (iii) any restriction has been imposed under the laws of Pakistan on the free transfer of foreign currency funds held by, or on behalf of, HUBCO out of Pakistan;
- (iv) any restriction has been imposed under the laws of Pakistan on the free transfer of rupees held by, or on behalf of, HUBCO from a project account for the purposes of the Foreign Exchange Risk Insurance Scheme;
- (v) there has been a change in Shariah law (or such a change is due to occur within six months) which causes the following to become unlawful, unenforceable or invalid: HUBCO's obligation to make a payment or perform an obligation under any of the project or financing agreements; HUBCO's enjoyment of its rights under any such agreement, or enforcement, or rights to enforcement in Pakistan, by HUBCO or the Lenders of any obligation of the parties to such agreements; provided that such unlawfulness, unenforceability or invalidity affects a payment obligation in excess of \$100,000 in respect of interest or fees or in excess of \$1 million in respect of principal or any security or right constituted by the security which is material to the Lenders or HUBCO (a "Shariah Event"). The ECO Guarantee specifically excludes from coverage the existing Federal Shariah court decision on interest, which has been appealed to the Supreme Court of Pakistan. If such a decision is upheld by the Supreme Court, such a decision would be a Shariah Event from that time; or
- (vi) the performance by the Government of any of its obligations, or the exercise by HUBCO of any of its rights, under the Implementation Agreement or the performance by HUBCO of any of its obligations, or the exercise by the Lenders or the Lenders' Agent of any of their rights, under the ECO Facility Agreement has become void, illegal, invalid or unenforceable as a result of

any change in Pakistan law or any court decision which renders inaccurate the legal opinions obtained by the Lenders at financial closing (an "Indemnified Event").

**Payment Obligations of the Government under the Implementation Agreement and the Government's Guarantee which are Covered by the ECO Guarantee:** The principal payment obligations of the Government under the Implementation Agreement consist of the payments for: (a) Special Temporary Funding (STF); (b) Deficit Funding; (c) compensation in the event the Implementation Agreement is terminated; and (d) compensation amounts payable in certain cases following a commercial default by HUBCO. Under the Government's guarantee, the Government is also responsible for guaranteeing the payment obligations of PSO under the Fuel Supply Agreement and WAPDA under the Power Purchase Agreement and for guaranteeing the obligations of the State Bank of Pakistan under the Foreign Exchange Risk Insurance Scheme.

- (i) **Special Temporary Funding.** The Government is required to make repayable advances to HUBCO in the form of Special Temporary Funding upon the occurrence of certain force majeure events which materially affect the performance by a party of its obligations or the enjoyment by a party of its rights under the Implementation Agreement, the Fuel Supply Agreement or the Power Purchase Agreement which cause HUBCO to incur additional costs or a loss in income. Such events include certain natural events (including natural events affecting the Plant for which insurance is unavailable) as well as political events (such as war, riot and change in law). STF is payable in the amount necessary to compensate HUBCO for loss of revenue and the cost of restoring the Plant to its previous condition. (A supplemental tariff will be charged by HUBCO in an amount sufficient to repay STF and interest thereon to the Government).
- (ii) **Deficit Funding.** The Government is required to provide repayable deficit funding to HUBCO in the amount needed to make any penalty payments due to WAPDA under the Power Purchase Agreement if HUBCO has insufficient funds to do so after making debt service, insurance costs and fixed operation cost payments from the Capacity Purchase Price payments made by WAPDA.
- (iii) **Termination Amounts.** The Implementation Agreement provides that either HUBCO or the Government may terminate the Implementation Agreement in certain specified events. In certain of these cases the Government is obligated to pay HUBCO a termination amount, the level of which depends on the reason for termination but which in all cases would include the Loan amount due the Lenders. The Government is obligated to pay a termination amount where the Implementation Agreement is terminated because of:
  - a. a Government default thereunder;
  - b. the occurrence of a Shariah Event;

- c. the occurrence of a natural force majeure event which affects the WAPDA grid or the PSO system (but not the Plant) where HUBCO and the Government agree to terminate or an expert determines that the Project is no longer viable;
  - d. the occurrence of a Pakistan political *force majeure* event where HUBCO and the Government agree to terminate or an expert determines the Project is no longer viable; or
  - e. the occurrence of an uninsured natural event causing damage to the Plant.
- (iv) **Compensation Amounts Payable After Commercial Default.** The Government is obligated to indemnify the Lenders if the Government interferes in the enforcement by the Lenders of their security or if an uninsured natural event occurs causing damage to the Plant following a commercial default. In such a case, the Government is required to pay the Lenders an amount equal to the decrease in value of the Lenders' security in consequence of the event. The Government is also obligated to pay the Lenders all amounts outstanding under the Loan in the event the Government impedes the Lenders from remedying a HUBCO event of default which gives the Government the right to terminate the Implementation Agreement or from restoring the Plant to a fully operational condition in such circumstances.
- (v) **Payment Obligations of PSO.** Under the Fuel Supply Agreement, PSO is obligated to indemnify HUBCO for any costs and losses (including any penalties due from HUBCO to WAPDA) resulting from the failure by PSO to complete the Pipeline to the Plant or the deliver fuel oil under the Fuel Supply Agreement.
- (vi) **Payment Obligations of WAPDA.** Under the Power Purchase Agreement, WAPDA is obligated to pay a tariff to HUBCO whether or not WAPDA dispatches the Plant. The tariff consists of four components: (a) a capacity purchase price equal to HUBCO's fixed costs independent of energy generation; (b) an energy purchase price equal to the cost of generating the electricity dispatched by WAPDA; (c) supplemental charges equal to certain taxes and other costs payable by HUBCO; and (d) a supplemental tariff equal to STF payable by HUBCO to the Government.
- (vii) **Payments Under Foreign Exchange Risk Insurance Scheme.** Under the Scheme, the State Bank of Pakistan is required to provide foreign exchange at a predetermined rate for the Loan upon receipt of the corresponding rupee amounts from HUBCO. In addition, under the Implementation Agreement the Government is obligated to permit free convertibility and transferability of foreign exchange in order to allow HUBCO to meet its obligations to third parties.

**Claim on ECO Guarantee Where There is a Commercial Default and a Guaranteed Default:** Whether or not the occurrence of the Guarantee Event was the sole cause of HUBCO's failure to pay such principal amount will not affect the ability of the ECO Lenders' Agent to make a claim under the ECO Guarantee. However, where notwithstanding the occurrence of the Guarantee Event, HUBCO would still have been unable to perform in full its payment obligations because of a commercial default, the amount payable under the ECO Guarantee will be reduced by that portion of the payment not paid by HUBCO because of the commercial default.

**Claim on ECO Guarantee Where There is a Commercial Default Followed by a Guaranteed Default:** The ECO Lenders' Agent may claim under the ECO Guarantee in the case where the Loan has been accelerated solely because of a commercial default and the ECO Lenders are attempting to enforce their security but are unable to do so because of a change in Pakistan law, expropriation or certain force majeure events. In such circumstances, the amount payable under the ECO Guarantee will in essence be the lesser of (i) the amount of the Loan remaining unpaid and (ii) the difference between the amount the ECO Lenders would have recovered had they been able to freely enforce their security and the amounts they actually recovered upon enforcement.

**Limitations on Enforcement:** If HUBCO fails to make a principal payment on the Loan as a result of a Shariah Event or an Indemnified Event, or because the Government has failed to make Capacity Purchase Price or Special Temporary Funding payments under the Implementation Agreement solely as a result of a dispute as to whether such amounts are payable, the Lenders may call on the ECO Guarantee for any unpaid scheduled installment of principal but may not accelerate the Loan and take enforcement action unless the default has not been remedied by certain specified dates, thus giving the Government the opportunity to remedy the situation before a claim may be made under the ECO Guarantee for the full unpaid principal amount of the Loan. The cure periods are six months for disputes regarding Capacity Purchase Price and Special Temporary Funding payments, nine months for a Shariah Event and twelve months for an Indemnified Event. In all cases, however, the cure period will be reduced, if necessary, so as not to exceed the period of time for which interest payments on the Loan are covered by the amount in the Guarantee Reserve Account.

**Guarantee Reserve Account:** As the ECO Guarantee does not guarantee interest payments on the Loan, an offshore Guarantee Reserve Account will be established to provide the Lenders with interest coverage during the cure periods when the Lenders are prevented from accelerating the Loan and claiming under the ECO Guarantee for the full principal amount in the circumstances described above. The Guarantee Reserve Account is required to be funded in an amount equal to 13 months' and 7 days' interest on the Loan. The Lenders may draw on the Guarantee Reserve Account for interest payments on the Loan in those cases where HUBCO has failed to make a scheduled principal payment installment and the Lenders are entitled to call on the ECO Guarantee for such payment.



Claims: Unless the ECO Lenders have notified the World Bank of a payment default within 60 days thereof, claims under the ECO Guarantee must be made within 60 days of the latter of (i) the due date in respect of which a failure to pay has occurred and (ii) the expiry of any applicable grace or cure period relating to the relevant Guarantee Event.

Calls on the Guarantees will be permitted for up to 60 days after the scheduled final maturity date of the Facilities. However, the Lenders have the option to extend the guarantee, on an annual basis, for a further five years upon payment of an annual guarantee fee. The purpose of the extension is to provide coverage in respect of the Government's continuing obligations under the Implementation Agreement following a commercial default during the time when the Lenders are seeking to enforce their security interests as described above.

Exclusion of Liability: The World Bank's liability under the ECO Guarantee will be reduced to the extent a claim arises out of or as a result of: (a) HUBCO, the Lenders, the Lenders' Agent, the security trustee or the intercreditor agent voluntarily entering into an agreement with the Government regarding such claim which materially reduces the claim against the Government; (b) the insolvency (except where contributed to by the action of the Government) of the Lenders' Agent, any of the banks holding the project accounts or any of the banks responsible for remitting funds to the State Bank of Pakistan for the Foreign Exchange Risk Insurance Scheme; or (c) a failure by such an account or remittance bank to transmit necessary funds (except where such failure is due to a Pakistan political event).

The ECO Guarantee will lapse if the Lenders amend or waive certain material provisions of the ECO Facility Agreement or the intercreditor agreement without the World Bank's consent or if the Lenders' Agent fails to request the intercreditor agent to issue a drawstop notice following the World Bank's demand to do so (as described below.)

Guarantee Fees: The guarantee fee will be payable in the respective currency guaranteed by HUBCO to the World Bank in installments. The first installment of approximately two years' guarantee fee will be payable on the date of the first drawdown under the Loan. Thereafter, an annual guarantee fee will be payable, commencing on the first anniversary of the Loan and on each subsequent anniversary date (until but excluding the anniversary date preceding the final maturity of the Loan). The fee will equal one quarter of one percent of (a) the Loan commitments during the Availability Period, and (b) the maximum Loan Amount thereafter. The ECO Guarantee will lapse if the guarantee fees are not paid when due.

Drawstop Notices: During the Availability Period, if HUBCO has issued a preliminary termination notice under the Implementation Agreement due to a default by the Government, the World Bank has the right to require the Lenders' Agent to

request the intercreditor agent to issue a drawstop notice to prevent HUBCO from making any further drawings under the ECO Facility Agreement. At any time while such a drawstop notice is in effect, the Lenders may claim under the ECO Guarantee for all amounts of principal which HUBCO fails to pay for any reason whatsoever.

**Subrogation:** Following a payment by the World Bank under the ECO Guarantee, the World Bank will be immediately subrogated to the rights of the Lenders (except for any such rights which relate to amounts in the Guarantee Reserve Account or in respect of any amounts due from the Government under the Implementation Agreement or in respect of amounts attributable to commercial default). However, until the Lenders have been repaid in full, the World Bank will not be subrogated to any voting entitlements held by the Lenders or be entitled to direct the Lenders as to how to exercise such rights. Under the terms of the ECO Guarantee, the World Bank has the right to waive its subrogation rights and rely exclusively on its rights against the Government under the Indemnity Agreement.

**Commitment**

**Fee:** Three quarters of one percent per annum on undrawn commitments.

**Pre-**

**payment:** HUBCO may voluntarily prepay the Loan in full or in part (in agreed minimum amount and multiples thereof) on any repayment date. On project completion, any surplus funds must be used to prepay the ECO/JEXIM Facilities. After project completion, 45% of surplus operating revenues must be used to prepay the senior debt pro rata, after permitted shareholder distributions.

**Indemnity**

**by Pakistan:**

The Islamic Republic of Pakistan (Pakistan) will enter into an Indemnity Agreement with the World Bank in respect of its Guarantee. Under such Indemnity Agreement, Pakistan would undertake to reimburse and indemnify the World Bank on demand, or as the World Bank may otherwise determine, for any payment made by the World Bank under the ECO Guarantee and for all liabilities and expenses incurred by the Bank with respect to the ECO Guarantee.

**Governing**

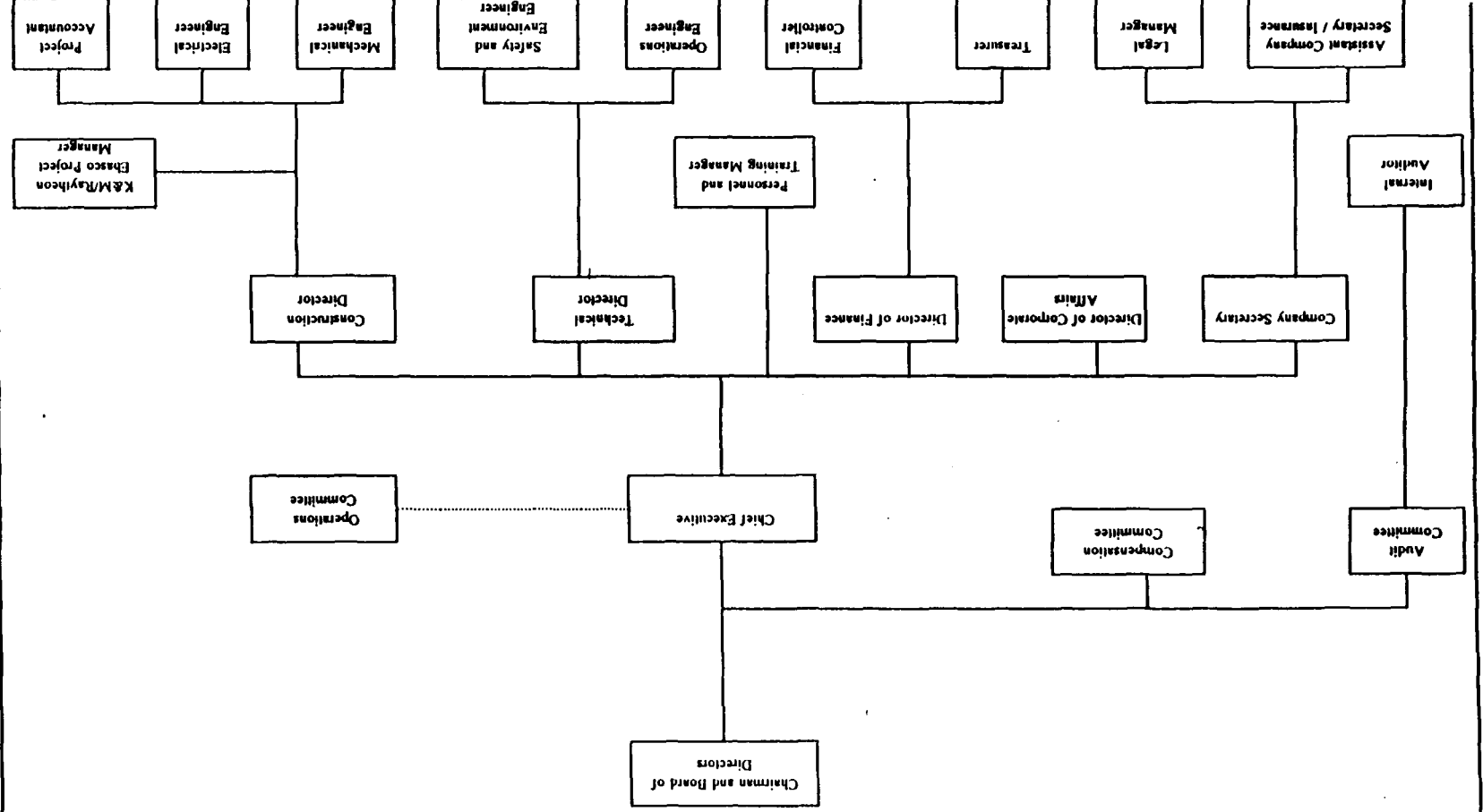
**Law and**

**Jurisdiction:**

The ECO Facility and the ECO Guarantee will be governed by English law and provide for the non-exclusive jurisdiction against the World Bank of the English courts. The Indemnity Agreement will follow the legal regime, and include dispute settlement provisions, which are customary in agreements between member countries and the World Bank.

**Agent:** Bank of Tokyo International Limited.

HUBCO ORGANISATION POST FINANCIAL CLOSING



Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-94	31-Dec-94	30-Jun-95	31-Dec-95	30-Jun-96	31-Dec-96	30-Jun-97	31-Dec-97	30-Jun-98	31-Dec-98
<b>I: ASSUMPTIONS (Part 1)</b>											
<b>MACROECONOMIC ASSUMPTIONS</b>											
<b>Exchange Rates (against US\$)</b>	¥	106.00	102.00	109.00	109.00	112.97	112.97	114.94	114.94	116.94	116.94
	£	0.65	0.66	0.68	0.68	0.69	0.69	0.70	0.70	0.71	0.71
	FF	5.42	5.52	5.72	5.72	5.77	5.77	5.82	5.82	5.87	5.87
	Ecu	0.85	0.84	0.88	0.88	0.89	0.89	0.90	0.90	0.92	0.92
	Lke	1,526.00	1,800.00	1,625.00	1,625.00	1,633.41	1,633.41	1,660.46	1,660.46	1,667.96	1,667.96
	Rs	31.50	31.50	33.85	33.85	35.36	35.36	36.95	36.95	38.61	38.61
<b>CPI (annual rate)</b>											
USA		2.70%	2.70%	3.50%	3.50%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%
Japan		0.80%	0.80%	1.50%	1.50%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%
UK		2.70%	2.70%	3.80%	3.80%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%
Italy		3.90%	3.90%	3.80%	3.80%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%
Pakistan		10.50%	10.50%	10.90%	10.90%	8.00%	8.00%	7.00%	7.00%	6.50%	6.50%
<b>Variable Interest Rates</b>											
US\$ 6-month LIBOR		3.82%	5.00%	5.19%	5.56%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
¥ 6-month LIBOR		2.30%	2.00%	2.25%	2.75%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
¥ LTPR		4.40%	4.17%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%
£ 6-month LIBOR		5.40%	5.40%	6.00%	6.00%	6.50%	6.50%	7.30%	7.30%	7.80%	7.80%
FF 6-month LIBOR		6.21%	5.25%	5.19%	5.06%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
Ecu 6-month LIBOR		6.12%	5.53%	5.52%	5.50%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%
Lke 6-month LIBOR		7.60%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
<b>Rupee Market Interest Rate</b>		10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
<b>OTHER ASSUMPTIONS</b>											
<b>RFO Price (per tonne)</b>	Rs	2,843.50	2,843.50	3,055.63	3,055.63	3,191.94	3,191.94	3,335.47	3,335.47	3,485.32	3,485.32
<b>IQRA Rate for Construction Costs</b>		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-99	31-Dec-99	30-Jun-2000	31-Dec-2000	30-Jun-2001	31-Dec-2001	30-Jun-2002	31-Dec-2002	30-Jun-2003	31-Dec-2003
<b>I: ASSUMPTIONS (Part 1)</b>											
<b>MACROECONOMIC ASSUMPTIONS</b>											
<b>Exchange Rates (against US\$)</b>	¥	118.97	118.97	121.04	121.04	123.15	123.15	125.29	125.29	127.47	127.47
	£	0.72	0.72	0.73	0.73	0.74	0.74	0.75	0.75	0.76	0.76
	FF	5.92	5.92	5.98	5.98	6.01	6.01	6.06	6.06	6.11	6.11
	Ecu	0.93	0.93	0.95	0.95	0.96	0.96	0.98	0.98	1.00	1.00
	Lire	1,715.91	1,715.91	1,744.32	1,744.32	1,773.21	1,773.21	1,802.57	1,802.57	1,832.42	1,832.42
	Rs	40.34	40.34	42.16	42.16	44.05	44.05	46.03	46.03	48.10	48.10
<b>CPI (annual rate)</b>											
	USA	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%
	Japan	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%
	UK	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%
	Italy	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%	3.90%
	Pakistan	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
<b>Variable Interest Rates</b>											
	US\$ 6-month LIBOR	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
	¥ 6-month LIBOR	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
	¥ LTPR	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%	4.30%
	£ 6-month LIBOR	7.80%	7.80%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	FF 6-month LIBOR	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
	Ecu 6-month LIBOR	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%
	Lire 6-month LIBOR	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
<b>Rupee Market Interest Rate</b>		10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
<b>OTHER ASSUMPTIONS</b>											
<b>RFO Price (per tonne)</b>	Rs	3,641.90	3,641.90	3,805.51	3,805.51	3,976.48	3,976.48	4,155.12	4,155.12	4,341.79	4,341.79
<b>IQRA Rate for Construction Costs</b>		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

## Project Model – Initial Project Forecast

## Hub Power Project

Currency Amounts are in Millions

Period Ending  
**I: ASSUMPTIONS (Part 1)**

30-Jun-2004    31-Dec-2004    30-Jun-2005    31-Dec-2005

**MACROECONOMIC ASSUMPTIONS**

<b>Exchange Rates (against US\$)</b>					
¥	129.69	129.69	131.95	131.95	
£	0.77	0.77	0.78	0.78	
FF	8.16	8.16	6.21	6.21	
Ecu	1.01	1.01	1.03	1.03	
Lira	1,862.77	1,862.77	1,893.61	1,893.61	
Rs	50.26	50.26	52.52	52.52	
<b>CPI (annual rate)</b>					
USA	3.40%	3.40%	3.40%	3.40%	
Japan	2.40%	2.40%	2.40%	2.40%	
UK	3.40%	3.40%	3.40%	3.40%	
Italy	3.90%	3.90%	3.90%	3.90%	
Pakistan	6.50%	6.50%	6.50%	6.50%	
<b>Variable Interest Rates</b>					
US\$ 6-month LIBOR	5.25%	5.25%	5.25%	5.25%	
¥ 6-month LIBOR	3.50%	3.50%	3.50%	3.50%	
¥ LTPR	4.30%	4.30%	4.30%	4.30%	
£ 6-month LIBOR	7.50%	7.50%	7.50%	7.50%	
FF 6-month LIBOR	5.25%	5.25%	5.25%	5.25%	
Ecu 6-month LIBOR	5.67%	5.67%	5.67%	5.67%	
Lira 6-month LIBOR	7.00%	7.00%	7.00%	7.00%	
<b>Rupee Market Interest Rate</b>	10.00%	10.00%	10.00%	10.00%	
<b>OTHER ASSUMPTIONS</b>					
<b>RFO Price (per tonne)</b>	Rs	4,536.85	4,536.85	4,740.67	4,740.67
<b>IGRA Rate for Construction Costs</b>		0.00%	0.00%	0.00%	0.00%

Project Model – Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-94	31-Dec-94	30-Jun-95	31-Dec-95	30-Jun-96	31-Dec-96	30-Jun-97	31-Dec-97	30-Jun-98	31-Dec-98
<b>II: CASH FLOW</b>											
Surplus Cash from Previous Period	Rs	116.41	119.51	0.00	0.00	0.00	0.00	2,033.61	1,784.31	0.00	(0.00)
Exchange Rate Adjustment	Rs	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted Surplus Cash	Rs	118.29	119.51	0.00	0.00	0.00	0.00	2,033.61	1,784.31	0.00	(0.00)
Development Expenditure	Rs	(1,459.10)	(10,669.60)	(4,992.09)	(8,588.15)	(4,623.91)	(2,004.55)	(1,350.00)	0.00	0.00	0.00
Interim Funding Adjustment	Rs	.97	(3,943.77)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Development Expenditure	Rs	(1,458.14)	(14,613.37)	(4,992.09)	(8,588.15)	(4,623.91)	(2,004.55)	(1,350.00)	0.00	0.00	0.00
Revenue	Rs	0.00	0.00	0.00	0.00	0.00	5,366.33	10,553.35	11,412.90	11,786.28	9,796.09
Operating Costs	Rs	0.00	0.00	0.00	0.00	0.00	(1,449.18)	(2,975.43)	(3,432.82)	(3,614.32)	(3,623.06)
Net Revenue from Operations	Rs	0.00	0.00	0.00	0.00	0.00	3,917.15	7,577.92	7,980.08	8,171.96	6,173.02
Working Capital Requirement	Rs	0.00	0.00	0.00	0.00	0.00	4.04	7.80	2.17	(0.72)	0.65
Interest on Cash Balances	Rs	0.00	0.00	0.00	0.00	0.00	0.00	118.19	210.82	328.32	243.99
Equity Contribution	Rs	453.60	9,377.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Export Credit Insurance Premia	Rs	0.00	(742.72)	(154.69)	(194.85)	(119.57)	(9.73)	(0.10)	0.00	0.00	0.00
Net Revenue	Rs	(886.25)	(5,859.53)	(5,146.78)	(8,783.01)	(4,743.48)	1,906.90	8,387.42	9,977.39	8,499.58	6,417.67
Interest & Fee Payments	Rs	(22.81)	(2,016.37)	(986.82)	(1,329.80)	(1,752.30)	(1,922.12)	(5,377.31)	(2,882.67)	(2,805.79)	(2,653.33)
Debt Drawdown	Rs	1,028.57	8,640.43	6,204.75	10,243.93	6,716.75	2,076.37	1,775.40	0.00	0.00	0.00
Debt Scheduled Repayments	Rs	0.00	0.00	0.00	0.00	0.00	0.00	(0.00)	(1,519.14)	(1,519.14)	(1,519.14)
Payments (to)/from RMRA	Rs	0.00	0.00	0.00	0.00	0.00	0.00	(497.26)	36.91	38.85	57.15
Payments (to)/from GRA	Rs	0.00	(117.30)	(88.98)	(148.91)	(239.85)	(46.43)	(24.56)	61.27	60.26	59.24
Payments (to)/from Debt Service Res. A/c	Rs	0.00	0.00	0.00	0.00	0.00	0.00	(2,497.82)	186.06	166.73	181.92
Payments (to)/from SACE Collateral Acc.	Rs	0.00	(647.22)	17.83	17.78	18.89	18.89	18.44	60.98	59.83	58.68
Cashflow after Debt Service	Rs	119.51	0.00	0.00	0.00	0.00	2,033.61	1,784.31	5,920.81	4,500.29	2,602.18
Loan Prepayments Carried Forward	Rs	0.00	0.00	0.00	0.00	0.00	(0.00)	0.00	(0.00)	0.00	0.00
Allocations to Project Company Account	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(5,920.81)	(4,500.29)	(2,602.18)
Cashflow Carried Forward	Rs	119.51	0.00	0.00	0.00	0.00	2,033.61	1,784.31	0.00	(0.00)	0.00
Gross Dividends paid to Shareholders		0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.00)	5,920.81	4,500.29
Dividends as a percentage of Issued Capital		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.0%	52.4%	39.8%

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## Project Model - Initial Project Forecast

## Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-99	31-Dec-99	30-Jun-2000	31-Dec-2000	30-Jun-2001	31-Dec-2001	30-Jun-2002	31-Dec-2002	30-Jun-2003	31-Dec-2003
<b>II: CASH FLOW</b>											
Surplus Cash from Previous Period	Rs	0.00	0.00	0.00	(0.00)	(0.00)	(0.00)	0.00	(0.00)	0.00	(0.00)
Exchange Rate Adjustment	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted Surplus Cash	Rs	0.00	0.00	0.00	(0.00)	(0.00)	(0.00)	0.00	(0.00)	0.00	(0.00)
Development Expenditure	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interim Funding Adjustment	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Development Expenditure	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue	Rs	10,092.07	9,888.95	10,241.58	10,427.40	10,540.92	10,633.39	11,085.66	10,731.66	11,215.79	10,879.71
Operating Costs	Rs	(3,793.15)	(3,791.80)	(3,969.09)	(3,967.87)	(4,152.58)	(4,150.81)	(4,343.48)	(4,341.44)	(4,542.72)	(4,540.77)
Net Revenue from Operations	Rs	6,298.92	6,097.15	6,272.50	6,459.53	6,388.35	6,482.58	6,742.19	6,390.22	6,673.06	6,338.93
Working Capital Requirement	Rs	0.86	0.37	0.74	0.37	0.80	0.39	0.85	0.41	0.92	0.44
Interest on Cash Balances	Rs	200.51	200.58	204.72	218.72	224.80	218.84	230.89	232.48	236.79	239.60
Equity Contribution	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Export Credit Insurance Premia	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Revenue	Rs	6,500.29	6,298.10	6,477.95	6,678.62	6,613.94	6,699.61	6,973.73	6,623.11	6,910.77	6,578.98
Interest & Fee Payments	Rs	(2,576.10)	(2,418.38)	(2,351.22)	(2,192.57)	(2,114.42)	(1,922.15)	(1,810.38)	(1,630.59)	(1,518.74)	(1,318.72)
Debt Drawdown	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Debt Scheduled Repayments	Rs	(1,519.14)	(1,519.14)	(1,519.14)	(1,519.14)	(1,991.86)	(1,991.86)	(1,991.86)	(1,991.86)	(1,991.86)	(1,991.86)
Payments (to)/from RMRA	Rs	55.47	53.79	52.10	50.42	46.63	38.55	39.84	47.34	45.52	43.70
Payments (to)/from GRA	Rs	58.22	57.20	56.18	55.16	52.87	47.96	48.59	53.00	51.94	50.88
Payments (to)/from Debt Service Res. A/c	Rs	178.80	174.52	172.73	169.61	166.49	163.37	147.77	159.83	157.03	153.25
Payments (to)/from SACE Collateral Acc.	Rs	57.52	56.37	55.22	54.06	52.91	51.76	50.61	49.45	48.30	47.15
Cashflow after Debt Service	Rs	2,755.06	2,702.48	2,943.83	3,294.18	2,826.56	3,087.25	3,458.29	3,310.28	3,704.95	3,563.37
Loan Prepayments Carried Forward	Rs	0.00	0.00	(0.00)	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00
Allocations to Project Company Account	Rs	(2,755.06)	(2,702.48)	(2,943.83)	(3,294.18)	(2,826.56)	(3,087.25)	(3,458.29)	(3,310.28)	(3,704.95)	(3,563.37)
Cashflow Carried Forward	Rs	0.00	0.00	(0.00)	(0.00)	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00
Gross Dividends paid to Shareholders		2,602.18	2,755.06	2,702.48	2,943.83	3,294.18	2,826.56	3,087.25	3,458.29	3,310.28	3,704.95
Dividends as a percentage of issued Capital		23.0%	24.4%	23.8%	26.0%	29.1%	25.0%	27.3%	30.6%	29.3%	32.8%

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Project Model – Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-2004	31-Dec-2004	30-Jun-2005	31-Dec-2005
<b>II: CASH FLOW</b>					
Surplus Cash from Previous Period	Rs	0.00	0.00	0.00	0.00
Exchange Rate Adjustment	Rs	0.00	0.00	0.00	0.00
Adjusted Surplus Cash	Rs	0.00	0.00	0.00	0.00
Development Expenditure	Rs	0.00	0.00	0.00	0.00
Interim Funding Adjustment	Rs	0.00	0.00	0.00	0.00
Net Development Expenditure	Rs	0.00	0.00	0.00	0.00
Revenue	Rs	11,409.54	11,012.15	9,874.38	9,880.78
Operating Costs	Rs	(4,752.03)	(4,751.17)	(4,983.88)	(4,953.98)
Net Revenue from Operations	Rs	6,657.50	6,260.98	4,890.70	4,926.81
Working Capital Requirement	Rs	0.98	0.47	1.05	0.49
Interest on Cash Balances	Rs	244.83	247.07	209.00	217.55
Equity Contribution	Rs	0.00	0.00	0.00	0.00
Export Credit Insurance Premia	Rs	0.00	0.00	0.00	0.00
Net Revenue	Rs	6,903.41	6,508.52	5,120.76	5,144.85
Interest & Fee Payments	Rs	(1,205.79)	(1,012.38)	(859.18)	(718.58)
Debt Drawdown	Rs	0.00	0.00	0.00	0.00
Debt Scheduled Repayments	Rs	(1,991.88)	(1,991.88)	(1,991.88)	(472.72)
Payments (to)/from RMRA	Rs	41.88	40.08	38.24	0.00
Payments (to)/from GRA	Rs	49.83	48.77	47.71	0.00
Payments (to)/from Debt Service Res. A/c	Rs	150.03	148.81	1,862.72	(0.00)
Payments (to)/from SACE Collateral Acc.	Rs	46.00	44.84	43.89	0.00
Cashflow after Debt Service	Rs	3,993.49	3,784.78	4,062.09	3,953.55
Loan Prepayments Carried Forward	Rs	(0.00)	0.00	0.00	0.00
Allocations to Project Company Account	Rs	(3,993.49)	(3,784.78)	(4,062.09)	(3,953.55)
Cashflow Carried Forward	Rs	0.00	0.00	0.00	0.00
Gross Dividends paid to Shareholders		3,543.37	3,993.49	3,784.78	4,062.09
Dividends as a percentage of Issued Capital		31.5%	35.3%	33.5%	35.9%

Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-96	31-Dec-96	30-Jun-97	31-Dec-97	30-Jun-98	31-Dec-98	30-Jun-99	31-Dec-99	30-Jun-2000	31-Dec-2000
<b>VI: OPERATING INCOME &amp; EXPENDITURE</b>											
Availability	GWh	0.00	1,339.20	3,652.20	4,628.00	4,563.00	4,500.00	4,554.00	4,608.00	4,572.00	4,536.00
% Availability		NA	NA	NA	88.01%	86.62%	85.62%	86.64%	87.67%	86.99%	86.30%
Net Electrical Output	GWh	0.00	1,339.20	3,036.89	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38
Committed Hours	hr	0.00	4,651.50	10,560.46	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92
Capacity Charge	Rs	0.00	4,360.56	8,201.36	8,792.71	9,031.04	7,011.58	7,162.05	6,961.59	7,173.50	7,364.28
Energy Charge Rs per KWh											
- Fuel Cost Element		0.00	0.70	0.73	0.73	0.78	0.76	0.81	0.81	0.85	0.85
- Variable O&M Costs Inc IQRA		0.00	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.06	0.06
Total Energy Charge Rs per KWh		0.00	0.73	0.77	0.77	0.82	0.82	0.86	0.86	0.90	0.90
Total Energy Charge	Rs	0.00	981.05	2,323.35	2,607.82	2,777.76	2,798.53	2,932.09	2,930.35	3,070.15	3,066.63
Supplemental Charges	Rs	0.00	4.69	8.64	12.38	12.93	12.93	13.51	13.51	14.12	14.12
Withholding Tax Adjustment	Rs	0.00	0.00	0.00	0.00	(35.45)	(26.95)	(15.58)	(16.50)	(16.18)	(17.63)
Penalties	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bonus	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total PPA Revenue	Rs	0.00	5,346.33	10,533.35	11,412.90	11,786.28	9,796.09	10,092.07	9,888.95	10,241.58	10,427.40
Other Revenue:	Rs										
TCC Liquidated Damages	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Return of FSA Security Deposit	Rs	0.00	20.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Operating Revenue	Rs	0.00	5,366.33	10,553.35	11,412.90	11,786.28	9,796.09	10,092.07	9,888.95	10,241.58	10,427.40

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Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-96	31-Dec-96	30-Jun-97	31-Dec-97	30-Jun-98	31-Dec-98	30-Jun-99	31-Dec-99	30-Jun-2000	31-Dec-2000
<b>OPERATING COSTS</b>											
Fuel Cost	Rs	0.00	930.87	2,218.06	2,490.71	2,603.49	2,804.37	2,722.30	2,723.22	2,846.53	2,847.50
Fixed Costs (Inc IQRA)	Rs	0.00	354.75	381.57	401.84	417.34	405.25	420.31	408.61	423.75	412.27
O&M Contract Costs											
Variable Costs (Rs per MWh)		0.00	9.98	10.87	11.28	12.95	13.87	14.83	14.89	15.83	15.83
Variable (Rs per Committed Hour)		0.00	7,579.32	8,101.89	8,539.15	9,870.12	10,615.29	11,349.54	11,398.57	12,119.21	12,119.21
Total Variable Costs	Rs	0.00	48.59	117.95	139.15	160.62	172.55	184.48	185.27	196.98	196.98
Operator's Share of PPA Bonus	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operator's Share of PPA Liq. Damages	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Efficiency Bonus	Rs	0.00	1.55	0.66	0.00	8.31	8.15	8.58	8.42	8.87	8.69
Fuel Efficiency Penalty	Rs	0.00	0.00	0.00	(0.43)	0.00	0.00	0.00	0.00	0.00	0.00
Operator's share of FSA Liq. Damages	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Contract Costs	Rs	0.00	404.89	500.18	540.56	586.27	585.95	613.37	602.30	629.60	617.95
<b>Other Costs</b>											
Hubco Costs	Rs	0.00	0.00	47.81	98.34	102.58	105.32	109.79	112.73	117.52	120.65
Construction Contract Bonuses	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FSA Penalties Payable to PSO	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Support Services Agreement	Rs	0.00	0.00	6.42	13.05	13.67	13.90	14.56	14.81	15.51	15.77
Insurance Costs	Rs	0.00	113.42	187.38	258.54	274.71	279.34	296.81	301.81	320.89	328.09
Facility Agents' Fees	Rs	0.00	0.00	15.55	31.63	33.81	34.18	36.32	36.93	39.24	39.90
TOTAL COSTS	Rs	0.00	1,449.18	2,975.43	3,432.82	3,614.32	3,823.06	3,793.15	3,791.80	3,969.09	3,967.87
<b>NET REVENUE FROM OPERATIONS</b>	Rs	0.00	3,917.15	7,577.92	7,980.08	8,171.96	8,173.02	8,298.92	8,097.15	8,272.50	8,459.53
<b>Revenue in 1994 Rs per kWh Despatched</b>											
Capacity Charge	NA		2.57	2.06	1.91	1.90	1.43	1.41	1.33	1.33	1.32
Fuel Cost Element	0.00		0.55	0.55	0.54	0.55	0.54	0.54	0.53	0.53	0.52
Other Energy Charge	0.00		0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.03
Other PPA Charges	NA		0.00	0.00	0.00	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Total PPA Revenue	NA		3.15	2.64	2.47	2.47	1.99	1.99	1.89	1.90	1.87
Other Income	NA		0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue per kWh	NA		3.16	2.65	2.47	2.47	1.99	1.99	1.89	1.90	1.87
<b>Costs in 1994 Rs per kWh Despatched</b>											
Fixed Operating Costs	NA		0.21	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.07
Fuel Cost	NA		0.55	0.56	0.54	0.55	0.53	0.54	0.52	0.53	0.51
Variable Operating Costs	NA		0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
Other O&M Contract Costs	NA		0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00
Other Costs	NA		0.07	0.06	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Total Cost per kWh	NA		0.85	0.75	0.74	0.76	0.74	0.75	0.72	0.73	0.71
Operating Profit per kWh	NA		2.31	1.90	1.73	1.72	1.26	1.24	1.16	1.16	1.16
Operating Margin	NA		37.00%	39.26%	43.02%	44.23%	58.69%	60.22%	62.19%	63.28%	61.43%
Average Tariff US\$/kWh 1994 Prices			0.104	0.085	0.081	0.079	0.065	0.063	0.060	0.059	0.059

Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-2001	31-Dec-2001	30-Jun-2002	31-Dec-2002	30-Jun-2003	31-Dec-2003	30-Jun-2004	31-Dec-2004	30-Jun-2005	31-Dec-2005
<b>VI: OPERATING INCOME &amp; EXPENDITURE</b>											
Availability	GWh	4,554.00	4,572.00	4,554.00	4,536.00	4,545.00	4,554.00	4,554.00	4,554.00	4,554.00	4,554.00
% Availability		86.64%	86.99%	86.64%	86.30%	86.47%	86.64%	86.64%	86.64%	86.64%	86.64%
Net Electrical Output	GWh	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38	3,395.38
Committed Hours	hr	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92	11,817.92
Capacity Charge	Rs	7,332.84	7,426.25	7,726.05	7,378.26	7,700.16	7,370.69	7,730.66	7,340.40	6,024.35	6,037.22
Energy Charge Rs per KWh											
- Fuel Cost Element		0.89	0.89	0.93	0.93	0.97	0.97	1.01	1.01	1.06	1.06
- Variable O&M Costs Inc IQRA		0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08
Total Energy Charge Rs per KWh		0.95	0.95	0.99	0.99	1.04	1.04	1.08	1.08	1.14	1.13
Total Energy Charge	Rs	3,213.06	3,209.31	3,362.68	3,358.69	3,519.34	3,515.09	3,683.36	3,678.84	3,855.11	3,850.29
Supplemental Charges	Rs	14.75	14.75	15.42	15.42	16.11	16.11	16.83	16.83	17.59	17.59
Withholding Tax Adjustment	Rs	(19.73)	(18.93)	(18.49)	(20.71)	(19.82)	(22.19)	(21.34)	(23.91)	(22.66)	(24.32)
Penalties	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bonus	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total PPA Revenue	Rs	10,540.92	10,633.39	11,085.66	10,731.66	11,215.79	10,879.71	11,409.54	11,012.15	9,874.38	9,880.78
Other Revenue:	Rs										
TCC Liquidated Damages	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Return of FSA Security Deposit	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Operating Revenue	Rs	10,540.92	10,633.39	11,085.66	10,731.66	11,215.79	10,879.71	11,409.54	11,012.15	9,874.38	9,880.78

Project Model – Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-2001	31-Dec-2001	30-Jun-2002	31-Dec-2002	30-Jun-2003	31-Dec-2003	30-Jun-2004	31-Dec-2004	30-Jun-2005	31-Dec-2005
<b>OPERATING COSTS</b>											
Fuel Cost	Rs	2,976.43	2,977.44	3,112.26	3,113.31	3,254.26	3,255.38	3,402.78	3,403.83	3,558.06	3,559.26
Fixed Costs (inc IGRA)	Rs	426.34	413.57	426.83	412.77	425.00	410.38	422.57	408.08	432.10	429.56
O&M Contract Costs											
Variable Costs (Rs per MWh)		16.83	16.83	17.90	17.90	19.03	19.03	20.24	20.24	21.52	21.52
Variable (Rs per Committed Hour)		12,885.79	12,885.79	13,701.25	13,701.25	14,568.73	14,568.73	15,491.57	15,491.57	16,473.32	16,473.32
Total Variable Costs	Rs	209.44	209.44	222.70	222.70	236.80	236.80	251.80	251.80	267.75	267.75
Operator's Share of PPA Bonus	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operator's Share of PPA Liq. Damages	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fuel Efficiency Bonus	Rs	9.16	8.97	9.45	9.26	9.76	9.56	10.07	9.88	10.40	10.18
Fuel Efficiency Penalty	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operator's share of FSA Liq. Damages	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total O&M Contract Costs	Rs	644.94	631.98	658.78	644.73	671.56	658.71	684.44	669.74	710.25	707.50
<b>Other Costs</b>											
Hubco Costs	Rs	125.79	129.14	134.66	138.24	144.16	147.98	154.33	158.42	165.23	169.60
Construction Contract Bonuses	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FSA Penalties Payable to PSO	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Support Services Agreement	Rs	16.53	16.81	17.61	17.90	18.76	19.07	19.96	20.32	21.29	21.65
Insurance Costs	Rs	346.49	352.33	374.36	380.66	404.48	411.30	437.02	444.39	472.18	480.15
Facility Agents' Fees	Rs	42.39	43.11	45.80	46.58	49.49	50.32	53.47	54.37	56.66	58.22
TOTAL COSTS	Rs	4,152.58	4,150.81	4,343.48	4,341.44	4,542.72	4,540.77	4,752.03	4,751.17	4,963.68	4,953.96
<b>NET REVENUE FROM OPERATIONS</b>	Rs	<b>6,388.35</b>	<b>6,482.58</b>	<b>6,742.19</b>	<b>6,390.22</b>	<b>6,673.06</b>	<b>6,338.93</b>	<b>6,657.50</b>	<b>6,260.98</b>	<b>4,910.70</b>	<b>4,926.81</b>
<b>Revenue in 1994 Rs per kWh Despatched</b>											
Capacity Charge		1.27	1.25	1.26	1.17	1.18	1.09	1.11	1.02	0.81	0.79
Fuel Cost Element		0.52	0.51	0.51	0.50	0.50	0.49	0.49	0.48	0.49	0.47
Other Energy Charge		0.04	0.03	0.04	0.03	0.04	0.03	0.04	0.03	0.04	0.03
Other PPA Charges		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Total PPA Revenue		1.83	1.79	1.81	1.70	1.72	1.62	1.64	1.53	1.33	1.29
Other Income		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue per kWh		1.83	1.79	1.81	1.70	1.72	1.62	1.64	1.53	1.33	1.29
<b>Costs in 1994 Rs per kWh Despatched</b>											
Fixed Operating Costs		0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06
Fuel Cost		0.52	0.50	0.51	0.49	0.50	0.48	0.49	0.47	0.48	0.47
Variable Operating Costs		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Other O&M Contract Costs		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Costs		0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.09	0.09
Total Cost per kWh		0.72	0.70	0.71	0.69	0.70	0.67	0.68	0.66	0.67	0.65
Operating Profit per kWh		1.11	1.09	1.10	1.01	1.02	0.94	0.96	0.87	0.66	0.64
Operating Margin		65.00%	64.03%	64.42%	67.94%	66.08%	71.63%	71.38%	75.89%	101.08%	100.55%
Average Tariff US\$/kWh 1994 Prices		0.056	0.056	0.055	0.052	0.051	0.049	0.048	0.046	0.038	0.038

Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-94	31-Dec-94	30-Jun-95	31-Dec-95	30-Jun-96	31-Dec-96	30-Jun-97	31-Dec-97	30-Jun-98	31-Dec-98
<b>VII: PROFIT PROJECTIONS</b>											
Sales	Rs	0.00	0.00	0.00	0.00	0.00	5,575.83	10,303.84	11,412.90	11,786.28	9,796.09
Operating Expenses	Rs	0.00	0.00	0.00	0.00	0.00	(1,449.18)	(2,975.43)	(3,432.82)	(3,614.32)	(3,623.08)
Operating Profit	Rs	0.00	0.00	0.00	0.00	0.00	4,126.65	7,328.42	7,980.08	8,171.96	6,173.02
Interest & Other Income	Rs	0.00	0.00	0.00	0.00	0.00	20.00	172.62	395.32	506.99	417.52
Revaluation of Cash Balances	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
EBDIAT	Rs	0.00	0.00	0.00	0.00	0.00	4,146.65	7,501.05	8,375.41	8,678.94	6,590.54
Less: amortisation expense	Rs	0.00	0.00	0.00	0.00	0.00	0.00	(831.58)	(831.58)	(831.58)	(831.58)
Amortization of Discount on Share Issue	Rs	0.00	0.00	0.00	0.00	0.00	0.00	(24.53)	(24.53)	(24.53)	(24.53)
EBIT	Rs	0.00	0.00	0.00	0.00	0.00	4,146.65	6,644.93	7,519.29	7,822.83	5,734.42
Less: interest expense	Rs	0.00	0.00	0.00	0.00	0.00	0.00	(5,377.41)	(2,882.67)	(2,805.79)	(2,853.33)
Profit before taxation	Rs	0.00	0.00	0.00	0.00	0.00	4,146.65	1,267.52	4,636.63	5,017.04	3,081.10
Taxation	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Profit after taxation	Rs	0.00	0.00	0.00	0.00	0.00	4,146.65	1,267.52	4,636.63	5,017.04	3,081.10
Retained Profit from previous period	Rs	0.00	0.00	0.00	0.00	0.00	0.00	4,146.65	5,414.17	4,129.99	4,646.73
Net Dividends Payable	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(5,512.21)	(4,189.72)	(2,422.60)
Withholding taxes	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(408.61)	(310.57)	(179.58)
Retained Profit carried forward	Rs	0.00	0.00	0.00	0.00	0.00	4,146.65	5,414.17	4,129.99	4,646.73	5,125.65

Period Ending		30-Jun-94	31-Dec-94	30-Jun-95	31-Dec-95	30-Jun-96	31-Dec-96	30-Jun-97	31-Dec-97	30-Jun-98	31-Dec-98
<b>BALANCE SHEET</b>											
<b>Assets</b>											
Fixed Assets	Rs	4,637.98	22,001.41	28,097.76	38,183.21	44,643.25	48,544.77	49,063.19	48,231.61	47,400.04	46,568.46
Discount on Share Issue	Rs	0.00	245.34	245.34	245.34	245.34	245.34	220.81	196.27	171.74	147.21
Stocks	Rs										
Debtors	Rs	0.00	0.00	0.00	0.00	0.00	311.30	193.09	217.39	231.50	233.20
Financial Assets	Rs										
Cash in Reserve Accounts	Rs	(0.00)	773.56	881.96	1,040.44	1,297.15	1,359.57	4,395.21	4,234.48	4,087.49	3,904.03
Cash at bank and in hand	Rs	119.51	0.00	0.00	0.00	0.00	2,033.61	1,784.31	5,920.81	4,500.29	2,602.18
<b>Total Assets</b>	Rs	<b>4,757.49</b>	<b>23,020.31</b>	<b>29,225.06</b>	<b>39,468.99</b>	<b>46,185.74</b>	<b>52,494.59</b>	<b>55,656.61</b>	<b>58,800.58</b>	<b>56,391.05</b>	<b>53,455.08</b>
<b>Liabilities</b>											
Current Liabilities	Rs	0.00	0.00	0.00	0.00	0.00	(85.83)	(204.93)	(231.40)	(244.79)	(247.15)
Debt due within 1 year	Rs	0.00	0.00	(0.00)	(0.00)	(0.00)	(1,399.28)	(2,797.30)	(2,796.03)	(2,796.03)	(2,796.03)
Long-term loans	Rs	(2,830.28)	(11,470.71)	(17,675.46)	(27,919.39)	(34,636.14)	(35,313.22)	(35,690.61)	(34,172.74)	(32,653.60)	(31,134.47)
Dividends	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(5,920.81)	(4,500.29)	(2,602.18)
<b>Total Liabilities</b>	Rs	<b>(2,830.28)</b>	<b>(11,470.71)</b>	<b>(17,675.46)</b>	<b>(27,919.39)</b>	<b>(34,636.14)</b>	<b>(36,798.33)</b>	<b>(38,692.84)</b>	<b>(43,120.98)</b>	<b>(40,184.71)</b>	<b>(36,779.62)</b>
<b>Shareholders' Equity</b>											
Share Capital	Rs	(1,927.21)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)
Retained Profit	Rs	0.00	0.00	0.00	0.00	0.00	(4,146.65)	(5,414.17)	(4,129.99)	(4,646.73)	(5,125.65)
<b>Total Shareholders' Equity</b>	Rs	<b>(1,927.21)</b>	<b>(11,549.60)</b>	<b>(11,549.60)</b>	<b>(11,549.60)</b>	<b>(11,549.60)</b>	<b>(15,696.26)</b>	<b>(16,963.78)</b>	<b>(15,679.59)</b>	<b>(16,196.34)</b>	<b>(16,675.26)</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	Rs	<b>(4,757.49)</b>	<b>(23,020.31)</b>	<b>(29,225.06)</b>	<b>(39,468.99)</b>	<b>(46,185.74)</b>	<b>(52,494.59)</b>	<b>(55,656.61)</b>	<b>(58,800.58)</b>	<b>(56,391.05)</b>	<b>(53,455.08)</b>

Project Model - Initial Project Forecast

Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-99	31-Dec-99	30-Jun-2000	31-Dec-2000	30-Jun-2001	31-Dec-2001	30-Jun-2002	31-Dec-2002	30-Jun-2003	31-Dec-2003
<b>VII: PROFIT PROJECTIONS</b>											
Sales	Rs	10,092.07	9,888.95	10,241.58	10,427.40	10,540.92	10,833.39	11,085.66	10,731.66	11,215.79	10,879.71
Operating Expenses	Rs	(3,793.15)	(3,791.80)	(3,969.09)	(3,967.87)	(4,152.58)	(4,150.81)	(4,343.48)	(4,341.44)	(4,542.72)	(4,540.77)
Operating Profit	Rs	6,298.92	6,097.15	6,272.50	6,459.53	6,388.35	6,682.58	6,742.18	6,390.22	6,673.06	6,338.93
Interest & Other Income	Rs	367.06	360.17	357.39	362.42	363.53	348.53	356.14	351.97	349.02	344.56
Revaluation of Cash Balances	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EBDIAT	Rs	6,665.98	6,457.32	6,629.89	6,821.95	6,751.88	6,831.11	7,098.33	6,742.19	7,022.09	6,683.50
Less: amortisation expense	Rs	(831.58)	(831.58)	(831.58)	(831.58)	(831.58)	(831.58)	(831.58)	(831.58)	(831.58)	(831.58)
Amortisation of Discount on Share Issue	Rs	(24.53)	(24.53)	(24.53)	(24.53)	(24.53)	(24.53)	0.00	0.00	0.00	0.00
EBIT	Rs	5,809.87	5,801.20	5,773.77	5,965.84	5,895.76	5,974.99	6,266.75	5,910.61	6,190.51	5,851.92
Less: interest expense	Rs	(2,576.10)	(2,418.36)	(2,351.22)	(2,192.57)	(2,114.42)	(1,922.15)	(1,810.38)	(1,630.59)	(1,516.74)	(1,316.78)
Profit before taxation	Rs	3,233.77	3,182.84	3,422.56	3,773.27	3,781.34	4,052.85	4,456.37	4,280.02	4,673.77	4,533.19
Taxation	Rs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Profit after taxation	Rs	3,233.77	3,182.84	3,422.56	3,773.27	3,781.34	4,052.85	4,456.37	4,280.02	4,673.77	4,533.19
Retained Profit from previous period	Rs	5,125.65	5,604.36	6,084.73	6,563.45	7,042.55	7,997.33	8,962.93	9,961.01	10,930.75	11,899.57
Net Dividends Payable	Rs	(2,564.93)	(2,515.97)	(2,740.67)	(3,066.84)	(2,631.50)	(2,874.19)	(3,219.63)	(3,081.63)	(3,449.27)	(3,317.46)
Withholding taxes	Rs	(190.13)	(186.50)	(203.16)	(227.34)	(195.07)	(213.06)	(238.66)	(226.45)	(255.69)	(245.92)
Retained Profit carried forward	Rs	5,604.36	6,084.73	6,563.45	7,042.55	7,997.33	8,962.93	9,961.01	10,930.75	11,899.57	12,869.39

Period Ending		30-Jun-99	31-Dec-99	30-Jun-2000	31-Dec-2000	30-Jun-2001	31-Dec-2001	30-Jun-2002	31-Dec-2002	30-Jun-2003	31-Dec-2003
<b>BALANCE SHEET</b>											
<b>Assets</b>											
Fixed Assets	Rs	45,736.88	44,905.30	44,073.72	43,242.14	42,410.56	41,578.98	40,747.40	39,915.82	39,084.24	38,252.66
Discount on Share Issue	Rs	122.87	98.14	73.60	49.07	24.53	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Stocks	Rs										
Debtors	Rs	244.33	244.18	255.82	255.53	267.72	267.42	280.19	279.86	293.23	292.88
Financial Assets	Rs										
Cash in Reserve Accounts	Rs	3,720.58	3,536.30	3,354.74	3,171.18	2,991.00	2,821.25	2,659.90	2,469.78	2,279.22	2,089.20
Cash at bank and in hand	Rs	2,755.06	2,702.48	2,943.83	3,294.18	2,826.56	3,087.25	3,458.29	3,310.28	3,704.95	3,563.37
Total Assets	Rs	52,579.52	51,488.39	50,701.71	50,012.09	48,520.38	47,754.89	47,145.78	45,975.74	45,361.65	44,198.12
<b>Liabilities</b>											
Current Liabilities	Rs	(259.13)	(259.36)	(271.74)	(271.82)	(284.81)	(284.89)	(298.51)	(298.60)	(312.69)	(312.98)
Debt due within 1 year	Rs	(2,796.03)	(2,796.03)	(3,268.33)	(3,738.60)	(3,734.53)	(3,732.50)	(3,732.50)	(3,732.50)	(3,732.50)	(3,732.50)
Long-term loans	Rs	(29,615.33)	(28,096.19)	(26,104.75)	(24,115.35)	(22,127.55)	(20,137.72)	(18,145.86)	(16,154.00)	(14,162.14)	(12,170.28)
Dividends	Rs	(2,755.06)	(2,702.48)	(2,943.83)	(3,294.18)	(2,826.56)	(3,087.25)	(3,458.29)	(3,310.28)	(3,704.95)	(3,563.37)
Total Liabilities	Rs	(35,425.55)	(33,854.05)	(32,588.65)	(31,419.94)	(28,973.45)	(27,242.38)	(25,635.16)	(23,495.38)	(21,912.48)	(19,779.13)
<b>Shareholders' Equity</b>											
Share Capital	Rs	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)
Retained Profit	Rs	(5,604.36)	(6,084.73)	(6,563.45)	(7,042.55)	(7,997.33)	(8,962.93)	(9,961.01)	(10,930.75)	(11,899.57)	(12,869.39)
Total Shareholders' Equity	Rs	(17,153.97)	(17,634.34)	(18,113.06)	(18,592.15)	(19,546.93)	(20,512.53)	(21,510.62)	(22,480.38)	(23,449.17)	(24,418.99)
Total Liabilities & Shareholders' Equity	Rs	(52,579.52)	(51,488.39)	(50,701.71)	(50,012.09)	(48,520.38)	(47,754.89)	(47,145.78)	(45,975.74)	(45,361.65)	(44,198.12)

## Project Model - Initial Project Forecast

## Hub Power Project

Currency Amounts are in Millions

Period Ending		30-Jun-2004	31-Dec-2004	30-Jun-2005	31-Dec-2005
<b>VII: PROFIT PROJECTIONS</b>					
Sales	Rs	11,408.54	11,012.15	9,874.38	9,880.78
Operating Expenses	Rs	(4,752.03)	(4,751.17)	(4,863.68)	(4,853.96)
Operating Profit	Rs	6,657.56	6,260.98	4,910.70	4,926.81
Interest & Other Income	Rs	342.64	337.53	292.21	217.55
Revaluation of Cash Balances	Rs	0.00	0.00	0.00	0.00
EBDIAT	Rs	7,000.14	6,598.51	5,202.91	5,144.36
Less: amortisation expense	Rs	(831.58)	(831.58)	(831.58)	(831.58)
Amortization of Discount on Share Issue	Rs	0.00	0.00	0.00	0.00
EBIT	Rs	6,168.56	5,766.93	4,371.33	4,312.78
Less: Interest expense	Rs	(1,205.78)	(1,012.36)	(858.18)	(718.58)
Profit before taxation	Rs	4,962.77	4,754.57	3,513.15	3,594.20
Taxation	Rs	0.00	0.00	0.00	0.00
Profit after taxation	Rs	4,962.77	4,754.57	3,513.15	3,594.20
Retained Profit from previous period	Rs	12,869.39	13,838.68	14,808.46	14,258.53
Net Dividends Payable	Rs	(3,717.89)	(3,523.58)	(3,781.75)	(3,880.71)
Withholding taxes	Rs	(275.60)	(261.19)	(280.33)	(272.64)
Retained Profit carried forward	Rs	13,838.68	14,808.46	14,258.53	13,869.18

Period Ending		30-Jun-2004	31-Dec-2004	30-Jun-2005	31-Dec-2005
<b>BALANCE SHEET</b>					
<b>Assets</b>					
Fixed Assets	Rs	37,421.08	36,589.50	35,757.92	34,928.34
Discount on Share Issue	Rs	(0.00)	(0.00)	(0.00)	(0.00)
Stocks	Rs				
Debtors	Rs	308.89	308.52	321.20	320.80
Financial Assets	Rs				
Cash in Reserve Accounts	Rs	1,899.18	1,709.18	0.00	0.00
Cash at bank and in hand	Rs	3,993.49	3,784.78	4,062.09	3,953.55
Total Assets	Rs	43,620.64	42,389.98	40,141.20	39,200.69
<b>Liabilities</b>					
Current Liabilities	Rs	(327.97)	(328.06)	(343.79)	(343.89)
Debt due within 1 year	Rs	(3,732.50)	(2,338.97)	(945.45)	(845.45)
Long-term loans	Rs	(10,178.42)	(9,580.08)	(8,981.75)	(8,509.02)
Dividends	Rs	(3,993.49)	(3,784.78)	(4,062.09)	(3,853.55)
Total Liabilities	Rs	(18,232.37)	(16,031.89)	(14,333.07)	(13,751.91)
<b>Shareholders' Equity</b>					
Share Capital	Rs	(11,549.60)	(11,549.60)	(11,549.60)	(11,549.60)
Retained Profit	Rs	(13,838.68)	(14,808.46)	(14,258.53)	(13,869.18)
Total Shareholders' Equity	Rs	(25,388.27)	(26,358.06)	(25,808.13)	(25,418.78)
Total Liabilities & Shareholders' Equity	Rs	(43,620.64)	(42,389.98)	(40,141.20)	(39,200.69)



**ECO FACILITY - ALLOCATIONS**

<b>Bank</b>	<b>US\$ (mm)</b>	<b>ECU (mm)</b>	<b>FF (mm)</b>	<b>Yen (mm)</b>
Bank of Tokyo	12.00	2.10	11.25	150.00
ING	8.00	1.45	8.00	95.00
ABN AMRO	7.50	1.35	7.25	85.00
Standard Chartered	7.50	1.35	7.25	85.00
WestLB	7.50	1.35	7.25	85.00
Citibank	7.00	1.25	6.00	70.00
Deutsche Bank	7.00	1.25	6.00	70.00
Credit Lyonnais	6.00	1.20	5.50	60.00
Orix	6.00	1.20	5.50	65.00
Mitsubishi Bank	5.50	1.00	5.30	60.00
Rabobank	5.75	0.95	5.25	65.00
BFCE	4.75	0.77	4.65	65.00
Credit Foncier	4.75	0.77	4.65	65.00
Bayerische Landesbank	4.75	0.90	4.75	55.00
DKB	4.75	0.90	4.75	55.00
Fuji Bank	4.75	0.90	4.75	55.00
LTCB	4.75	0.90	4.75	55.00
ANZ/Grindleys	4.00	0.72	4.00	50.00
Bank of Scotland	4.00	0.72	4.00	50.00
Girocredit	4.00	0.72	4.00	50.00
Kredietbank	4.00	0.72	4.00	50.00
NatWest	4.00	0.72	4.00	50.00
Mees Pierson	4.00	0.58	3.50	45.00
Royal Bank of Scotland	4.00	0.72	4.00	50.00
Dresdner Bank	3.00	0.54	3.00	45.00
IBJ	3.00	0.54	3.00	45.00
Mitsui Trust	3.00	0.54	3.00	45.00
Sanwa	3.00	0.54	3.00	45.00
Sumitomo Bank	3.00	0.54	3.00	45.00
Tokai Bank	3.00	0.54	3.00	45.00
Sakura Bank	2.75	0.46	2.65	40.00
Mitsubishi Trust	2.00	0.27	2.00	35.00
Norinchukin	2.00	0.27	2.00	35.00
SB Lease	2.00	0.27	2.00	35.00
<b>TOTAL</b>	<b>\$163 mm</b>	<b>29 mm</b>	<b>157 mm</b>	<b>2000 mm</b>

**JEXIM FACILITY ALLOCATIONS**

<b>BANK</b>	<b>YEN (MM's)</b>
Sakura Bank	1,120
Dresdner Bank	950
IBJ	950
Mitsui Trust & Banking	950
Sanwa Bank	950
Sumitomo Bank	950
Tokai Bank	950
Mitsubishi Trust	800
Mitsubishi Bank	780
Daiwa Bank	700
Citibank	550
Norinchukin	550
DKB	500
Fuji Bank	500
LTCB	500
Deutsche Bank	460
National Westminster	460
Yasuda Trust & Banking	460
Bank of Tokyo	342
<b>TOTAL</b>	<b>Yen 13,422 mm</b>

**MITI FACILITY ALLOCATIONS**

<b>BANK</b>	<b>YEN (MM'S)</b>
Sakura Bank	1,120
DKB	725
Fuji Bank	725
LTCB	725
Deutsche Bank	700
Dresdner Bank	550
IBJ	550
Mitsui Trust	550
Sanwa Bank	550
Sumitomo Bank	550
Tokai Bank	550
Mitsubishi Trust	500
Daiwa Bank	465
Bank of Tokyo	350
Mitsubishi Bank	350
Norinchukin	350
Yasuda Trust	350
<b>TOTAL</b>	<b>Yen 9,660 mm</b>

**SACE FACILITY ALLOCATIONS**

<b>BANK</b>	<b>ECU (MM's)</b>
Crediop	30
Mediocredito	20.9
Banco di Napoli (HK)	20
Banco di Napoli (Int'l)	20
Banco Nazionale del Lavoro	12
Centrobanca	12
Mediocredito Toscano	8
National Westminster	8
ING Bank	5
Royal Bank of Scotland	5
Standard Chartered	5
WestLB	5
ABN AMRO	4
Bank of Scotland	4
Citibank	4
Mees Pierson	4
Girocredit	4
Rabobank	4
<b>TOTAL</b>	<b>Ecu 174.9 mm</b>

**PAKISTAN**

**PRIVATE SECTOR ENERGY DEVELOPMENT FUND II**

**Port Qasim-Khalifa Point Fuel Oil Pipeline Subproject**

**PROJECT SETTING**

1. Pakistan lacks an efficient petroleum products transportation infrastructure to deliver fuel oil from receiving terminals in the Karachi area to thermal power generating centers across the country. Currently, the dominant mode of fuel oil supply is trucking by road which entails assuming substantial environmental risks especially when trucking routes involve densely populated areas. Moreover, trucking petroleum products by road is the least efficient and by far the most expensive means of transportation. In view of the fact that pipelines are the most efficient and reliable mode of transportation for petroleum products, efforts for enhancing supply logistics through establishing pipeline networks have become a priority for GOP which has earmarked the development of such networks to the private sector. The first of these pipeline projects to be earmarked to the private sector is a network to supply fuel oil from Port Qasim to the Hub Power Complex (1292 MW), Balochistan Power Plant (350 MW) and Fauji Power Plant (350 MW phase-I) all of which are currently under construction at Khalifa point in the Province of Balochistan 80 kms west of Karachi. Ultimately a pipeline would also be required to supply fuel oil to the existing Jamshoro Power Plant (880 MW) 120 kms north of Karachi.

2. The proposed pipeline subproject involves the construction of an 80 km pipeline linking the private sector owned FOTCO Terminal at Port Qasim through the Pipri oil storage facility and on to the demand centers in Balochistan. This subproject would be carried out by the newly formed Asia Petroleum Limited (APL), representing a public/private joint venture in which the private sector will hold majority shareholding. APL would be responsible for the design, financing, construction, commissioning, operation, maintenance and ownership of the pipeline under a limited recourse financing structure. APL's sponsors include Pakistan State Oil Company (PSO), a publicly listed corporation engaged in the marketing and distribution of petroleum products and whose majority shares are owned by the public sector; Asia Infrastructure Limited (AIL) of Singapore, a major project development company backed by institutional investors; Veco Engineers and Constructors (Veco) of the USA, a engineering firm with an established track record in pipeline development; and the Independent Petroleum Group (IPG) of Kuwait, a reputable international oil group with access to large supplies of petroleum products in the Persian Gulf. A further description of the sponsors is given in para 29-32.

3. The major concern to equity investors and commercial lenders in projects financed under limited recourse is the ability of the project company to construct the pipeline in accordance with the agreed timetable and operate it in accordance with the highest internationally accepted standards. While construction risks have been addressed and mitigated against by

designating Promet Private Ltd., a major Malaysian/Singaporean-based engineering and contracting company as the turnkey contractor, the sponsors have endorsed a series of mitigating measures to cover risks associated with the operation and maintenance of the pipeline and the security and consistency of the supply of the fuel oil.

4. The sponsors have appointed Veco as the operations and maintenance (O&M) contractor. Veco would review design documentation, provide technical services, and prepare operations manuals during the construction period and thereafter, operate and maintain the pipeline system in accordance with international standards. Veco would provide guarantees against un-scheduled interruptions. To mitigate risks arising from deviations in fuel oil specifications and supply disruption, the sponsors contracted IPG as the fuel oil supplier. IPG would provide guarantees for product specifications and delivery and would assume all associated risks. This arrangement would relieve GOP from the substantial liabilities associated with its implicit guarantees to PSO.

## **OBJECTIVES**

5. The purpose for the creation of APL is to launch the first private sector controlled company for the transport of petroleum products. In order to achieve this objective, APL would develop, design, finance, build, own and operate a pipeline network.

## **BASIC DESIGN AND PREPARATION**

6. Basic design was conducted by Fluor Daniel William's Brothers of the USA (Williams Brothers), acting as a subcontractor to Enar Petrotech of Pakistan (Enar) who are the overall design and engineering consultants. The pipeline design capacity would be 3.0 million ton per year and guaranteed throughput from Port Qasim to both power plants is expected to be 2.0 million ton per year, which corresponds to a plant utilization factor of 60%. The proposed pipeline would transverse in a northwestern direction from the FOTCO terminal at Port Qasim, located east of Karachi to the site of the Hub Power Complex, the Fauji Power Plant, and the Balochistan Power Plant at Khalifa Point in the province of Balochistan. Detailed engineering and specifications for equipment and materials has been undertaken by Enar which is also responsible for the initial right-of-way survey. Satellite imagery of the right-of-way is contracted to EarthSat of the USA.

7. PSO and Enar have identified the pipeline Right-of-Way (ROW) and prepared the necessary route and survey drawings as well as hydrologic and soil studies and collected data on streams and river crossings, ground temperatures and soil strata for basic design work. In addition, PSO has submitted all documentation, surveys both topographical and pre-computation, existing boundary surveys, maps, geo-technical and environmental data which together with the engineering consultant's design, performance, and acceptance criteria and engineering drawings and specifications would form the basis for the turnkey contractor to prepare a revised project costs estimate in the short time available.

## **PROJECT DESCRIPTION**

8. The subproject involves the construction of an 80 km fuel oil pipeline and associated facilities, and the leasing or acquisition of a 60,000 ton storage facility at PSO's Pipri terminal to supply the Hub Power Complex (1292 MW), the Fauji Power Plant (350 MW phase-1), and the Balochistan Power Plant (350 MW), all of which are currently under construction or will begin construction in 1994. More specifically, the project would involve:

- (a) the installation of an 80 km underground pipeline suitable for transporting heated fuel oil (FO) between the Pipri storage facilities and the site of Hubco , Balochistan and Fauji power Plants at Khalifa Point. The size and capacity of the pipeline would be such that it would meet the requirements of Hubco with the provision for later expansion to meet the needs of the Fauji and Balochistan plants;
- (b) pumping facilities at regular intervals to allow for the transport of fuel oil at pre-determined flow rates;
- (c) state-of-the-art monitoring, communication and control system such as SCADA and pipeline integrity monitoring system based on meters at both ends;
- (d) leasing or acquisition of storage facilities at PSO's Pipri terminal of 60,000 tons capacity;
- (e) installation of a pipeline trunk link between buffer storage facilities at Port Qasim's FOTCO terminal and PSO's Pipri storage facility; and
- (f) preparation and monitoring of the implementation of the project; formulation of procedures manuals and preventive maintenance program for the management and operations of the pipeline system in accordance with the highest internationally accepted standards; formulation of organizational structure, compensation scheme, job descriptions, staff competencies and evaluation procedures, staffing plan for APL; training of local staff on all aspects of operations and management and formulation and implementation of a financial reporting and monitoring systems as well as the setting of financial performance criteria for APL.

## PROJECT COST

9. The estimated project cost, including contingencies, working capital, interest during construction, foreign exchange risk insurance and financing charges is US\$100.0 million. The construction cost component alone is estimated at US\$72.0 million. The following is a cost breakdown for the subproject based on a pre-feasibility study undertaken by PSO and reviewed by the Bank and NDFC.

*Table 1: Project Cost Breakdown*

	<u>US\$ MILL</u>
Development costs	5.0
Acquisition of R-O-W	1.0
Feasibility study	1.0
Engineering & basic design	3.0
Environmental impact assessment	0.0
Legal and professional services	1.5
Turn Key Contract <sup>1/</sup>	58.0
Project management & supervision	2.0
Pre-commissioning & commissioning costs	0.5
<i>Total Project Cost</i>	<i>72.0</i>
Working capital requirements	2.0
<i>Total taxes and W. C. Cost</i>	<i>2.0</i>
F/X risk insurance	4.0
Front-end fees & financing charges	2.0
Contingencies (10%)	10.0
Interest during construction	10.0
<i>Total Financing Cost</i>	<i>26.0</i>
<i>Total Project Cost <sup>1</sup></i>	<i>100.0</i>

<sup>1/</sup> Does not include any import taxes, customs duties, Iqra surcharge and other taxes exempted under the new energy policy adopted by GOP in March 1994. The scope of the project has been expanded to ensure the integrity of the overall design which now encompasses in addition to the 80 km pipeline section, upgrading of Pipri Storage Facilities, a 9.5 km pipeline linking Pipri with the Fotco Terminal, and booster pump stations at the Fotco Terminal. The above preliminary figures for the TKC component of the project cost will be firmed up once the procurement process is launched. The overall project cost may be increased as a result.



## FINANCING PLAN

10. The subproject is structured along the lines of a private sector market-oriented venture financed on limited recourse. The source of re-payment is from the cash flow generated by the subproject, to cover all cost of operation, debt service and return on shareholders equity. Equity participants and lenders would assume all commercial risks.

**Table 2: Proposed Financing Plan**

	<u>US\$ Mn</u>	<u>F/L<sup>1/</sup></u>	<u>Share</u>
<b><u>Equity</u></b>			
Pakistan State Oil Co.	12.0	L	30%
Asia Infrastructure Ltd.	10.4	F	26%
Independent Petroleum Group	5.0	F	12.5%
Veco Engineers & Constructors	5.0	F	12.5%
CDC/IFC <sup>2/</sup> <sup>3/</sup>	4.0	F	10%
IPO & PSO Employees	3.6	L	9%
<b><u>Sub-total Equity</u></b>	<b><u>40.0</u></b>		<b><u>40%</u></b>
<b><u>Debt</u></b>			
<i>Senior:</i>			
AIL, IPG, Veco, PSO	13.0	F	
NDFC	2.0	L	
CDC <sup>3/</sup>	15.0	F	
<i>Subordinated:</i>			
World Bank Subordinated Debt	30.0	F	
<b><u>Sub-total Debt</u></b>	<b><u>60.0</u></b>		<b><u>60%</u></b>
<b><u>TOTAL PROJECT COST</u></b>	<b><u>100.0</u></b>		<b><u>100%</u></b>

<sup>1/</sup> F/L = Foreign/Local Content

<sup>2/</sup> IFC is currently reviewing its participation in APL. Following the successful development of a project, CDC traditionally divests a portion of its equity holding through a public offering or a private sale.

<sup>3/</sup> Subject to Board and relevant government approvals.

11. Development and mobilization finance will be arranged by the equity participants in order to enable the preliminary basic design and engineering to be completed, the R-O-W secured, and the financial structuring finalized. Project sponsors will share equally the mobilization and development costs estimated at US\$5.0 million until financial closure. This financing, in addition to PSO's audited costs to date, will be converted into shareholders equity following financial closure.

12. The financing plan calls for a debt:equity ratio of 60:40 corresponding to US\$60 million and US\$40 million respectively. AIL, Veco and IPG would jointly own 51% of APL, and would jointly assume liabilities for APL's failure to operate. AIL would subscribe US\$10.4 million (26%) and Veco and IPG US\$5.0 million (12.5%) each of APL's share capital. PSO would subscribe the equivalent of US\$12.0 million (30%) in local currency terms. The remaining equity would be subscribed by other local and foreign investors, with a 10% provision reserved for an Initial Public Offering (IPO) on the Karachi Stock Exchange. Debt financing of US\$13 million would be provided by the sponsors through their commercial banks. The IFC and the Commonwealth Development Corporation (CDC) would provide up to US\$15 million in senior debt and US\$4 million in equity. The National Development and Finance Corporation (NDFC) would provide the equivalent of US\$2 million in local currency terms. The Bank would provide US\$30 million in subordinated debt through its Long Term Credit Fund which is administered by NDFC.

## **PROJECT IMPLEMENTATION**

13. Promet Private Limited (Promet), a Malaysian/Singaporean engineering and contracting company with a proven track record in the process industries, would construct the pipeline under a fixed lump-sum turnkey contract (TKC) and assume both the completion and performance risks. Under the TKC, Promet would be liable for 15% of the value of the contract in liquidated damages in the event of failure to meet contract terms. According to the timetable for the construction of the pipeline, commissioning is scheduled for early 1996, allowing enough time for testing before the first units of the Hub Power Station is due to come on stream. Promet has provided APL with a draft turnkey construction contract. Negotiations on the terms and conditions of the contract have been finalized and initialed.

14. Procurement would be carried out with the objective of ensuring efficiency, economy and transparency in the selection of the various vendors, and subject to the Bank's guidelines. According to these guidelines, pre-qualification documents for all goods and services has been prepared by Promet and cleared by The Bank and NDFC. In order to ensure timely implementation, the bidding documents are currently being prepared by Promet.

15. Pre-qualified firms would be requested to bid on various equipment and materials using bid documents approved by the Bank. Award of the contract would be to the lowest evaluated responsive bidder, following approval by the Bank and NDFC. In the event export financing or supplier credit is secured for some of the goods and equipment, these would not be financed by the Bank.

16. Promet is responsible for reviewing the available data on the soil, geo-technical, hydrologic analysis of the R-O-W, with a view to identifying deficiencies if any. In the event that deficiencies are identified, APL would prepare terms of reference for the additional work required and the timetable for the completion of this work. The right-of-way survey for the pipeline has been appraised by Geodetic of Singapore under contract to Promet. Clearance of the R-O-W by GOP has been set as a condition for effectiveness of the proposed loan.

17. A technical committee headed by Veco would review design documentation, provide technical and construction management services, and prepare operations manuals during construction. Veco and PSO have entered into a joint venture to operate and maintain the pipeline following successful commissioning and would be responsible for the formulation of procedures manuals and preventive maintenance program for the management and operations of the pipeline system in accordance with the highest internationally accepted standards, formulation of organizational structure, compensation scheme, job descriptions, staff competencies evaluation procedures, staffing plan for APL, training of local staff on all aspects of operations and management, and formulation and implementation of a financial reporting and monitoring systems as well as the setting of financial performance criteria for APL.

18. Newly constructed storage facilities by PSO at Pipri would be utilized as part of the pipeline project. The value of assets at Pipri would be considered as part of PSO's equity contribution to APL. An independent engineering consultant would be appointed to conduct a financial and technical appraisal and valuation of PSO's storage facilities at Pipri.

19. IPG has structured a fuel oil supply agreement with GOP, the terms of which are currently being negotiated. The fuel oil would be priced against a market related benchmark. IPG would be required to provide GOP with guarantees covering both the delivery and quality of the fuel oil to be delivered to the FOTCO's oil receiving berth.

20. In order to comply with its obligations under the HUBCO-PSO FSA, GOP has sought the assistance of the Bank in structuring the pipeline project.<sup>1</sup> As part of this assistance, the Bank and NDFC are providing support to the APL sponsors in terms of preparing a cash flow model for the project to determine, more closely, the financial criteria and parameters under which the subproject is expected to perform and the tariff to be determined. The financial model will examine the returns on equity, coverage of debt service and O&M costs<sup>2</sup>. The tariff would be set at levels that cover debt service, operating cost, and return on equity. Subproject revenues are to be indexed for inflation and escalation in operating costs. In addition, the return on the foreign investment component of the tariff would be indexed annually to compensate for the depreciation of the Rupee relative to the US Dollar.

## **ENVIRONMENTAL ASSESSMENT**

21. A full Environmental Impact Assessment (EIA) has been conducted by Ebasco of the USA, an internationally reputable environmental firm, in accordance with the terms of reference approved by the Bank. Areas of study included: socioeconomics, construction,

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<sup>1</sup> APL's shareholders will take joint and several liabilities in terms of designing, financing, commissioning and operating the pipelines, as well as ensuring the supply of oil in the specified quantity and quality. PSO will continue to be liable under the Fuel Supply Agreement. In the event of a default by PSO, APL will indemnify GOP.

<sup>2</sup> According to GOP's petroleum policy, the project would yield an internal rate of return of 25% after corporate income tax.

sensitive areas, drainage patterns, erosion and habitat fragmentation. The study was reviewed and approved by the Bank in connection with the clearance of the EIA for the Hub Power Project.

22. **Resettlement & Rehabilitation:** The subproject will require the acquisition of about 67 ha of land along a 77 km ROW, of which 14 ha is currently used for agriculture, most of it marginal. Throughout the entire length of the 77 km route, the proposed ROW will impact only one residential development. The EIA has recommended that certain amendments be made to the alignment of the route to avoid existing and planned urban settlements near Karachi. Accordingly, the ROW is being re-surveyed taking this recommendation into account. The land acquisition program is administered by PSO and is 90% complete. Compensation to land owners has been in line with prevailing land prices in Pakistan. PSO does not anticipate that any legal difficulties would be encountered in securing land along the ROW.

23. **Agriculture:** A total of 35 acres of agricultural land along the proposed route will be permanently removed from use through the clearing and grading activities. This impact is unavoidable and necessary for pipeline installation. However, in relation to the overall agriculture activity of the region, this impact is insignificant. Moreover, land owners have been compensated for the loss of income.

24. **Oil Leakage Mitigation:** Arthur D. Little of the USA, acting on behalf of Hubco's financiers, have recommended that buried and sealed stubs be installed every 6.5 to 7 kms along the pipeline to cater for any accidental closure of the pipeline. This recommendation would be accommodated in the design and construction of the pipeline.

## **OVERALL SECURITY STRUCTURE**

25. The risks associated with the project are shared by the lenders, equity investors, contractor, operator, fuel oil supplier, PSO and the GOP. Project risks have been evaluated and allocated between the parties to the project where all commercial and operation risks would be born by the equity investors who would assume joint and several liabilities as follows: a) completion and performance risks will be born by Promet to ensure that the project is completed within the agreed time frame; b) operating risks would be assumed by the operator utilizing internationally accepted economic and technical parameters, proven technology, a competent labor force, expert operators and skilled management; c) end-use risk to be born by Hubco to ensure that the project is guaranteed a stable outlet for the fuel oil; d) design risks by Enar to ensure against any unwarranted deterioration in performance or sudden disruptions; e) fuel oil supply, quality and delivery risks by the fuel oil supplier; f) currency risk by the State Bank of Pakistan through the foreign exchange insurance mechanism for loans and adjustments to the return on the equity component of the tariff to compensate for the depreciation of the Rupee. PSO and APL will enter into an agreement to transfer the rights and obligations of PSO and its subsidiary company(s) in respect of Hubco to APL.

## **CORPORATE DEVELOPMENT**

26. The Board would appoint the Chairman and all Senior Executives. It will outline the operating policies and parameters for the company, which would be the basis for the day to day management of the company by the Managing Director. The Board would approve the declaration of dividends, new investments, budget allocations in accordance with the Shareholders Agreement. The project sponsors would appoint a number of experienced personnel for management and technical positions in the company. Following the finalization of the Shareholders Agreement, which would set out the terms under which the equity investors would regulate their rights and obligations, financial and general management personnel will be appointed by the Board of directors.

27. APL's Board would be constituted in accordance with the company laws of Pakistan where representation would be on the basis of equity participation. APL's Board would comprise a minimum of seven directors representing the interests of the equity participants. At all times the private sector would have 51% or more of all voting rights on the APL Board.

## **RATIONALE FOR BANK INVOLVEMENT**

28. In view of the importance of the project to Pakistan and in order to provide comfort to foreign private investors, GOP has requested the Bank to provide technical support and assist in the financial structuring of the project. The Bank has concentrated its efforts on structuring APL and obtaining GOP's endorsement of its plans with the objective of meeting the timing objectives of the project company. Construction must begin very shortly for the pipeline to be fully operational in time for the commissioning of the first units of the Hub Power Complex and to ensure that the project company is not subjected to liabilities arising thereof.

## **DESCRIPTION OF SPONSORS**

29. Pakistan State Oil Corporation: PSO is a publicly listed corporation owned by Pakistani financial institutions (50%), the GOP (25%), Individuals (21%), insurance companies (4%). PSO's main line of business is the marketing and distribution of petroleum products, LPG and petrochemicals in Pakistan. PSO enjoys an overall market share of 70% and has a turnover of the equivalent of US\$1.6 billion in local currency terms.

30. Veco Engineers and Constructors: Veco is a well established US-based engineering and contracting company employing 5,000 staff operating in 30 countries and an annual turnover of US\$400 million. Veco's extensive operations and maintenance experience include providing key O&M services to the Alaska Pipeline Consortium, Penzoil's Caspian Sea Development Gas Utilization Project in Khasakhstan, and Texaco's Cook Platform Facility among others. Veco's main accomplishments was being appointed Exxon Corporation's main contractor for the Valdez cleanup operation.

31. Independent Petroleum Group: IPG is a closed shareholding Kuwaiti company with major commercial and industrial interests and possessing considerable experience in energy. IPG is active in the purchase and sale of crude oil, refined products, and specialty products, petrochemicals and fertilizers in the European, African, Middle Eastern, and Far Eastern markets through its offices in Kuwait, London and Singapore. IPG's clients include Chevron, Mobil, Caltex, Petronas, Petromin, Aramco, Qatar General Petroleum Corporation, Bahrain National Oil Company , Kuwait Petroleum Corporation ...etc.

32. Asia Infrastructure Limited: AIL is a major Singapore-based project development company backed by institutional shareholders from Singapore, Malaysia, Hong Kong, Europe and the USA. Under management is a substantial investment portfolio geared towards infrastructure and energy projects.

PAKISTAN  
Private Sector Energy Development Project  
Private Sector Energy Development Fund  
Sources and Applications of Funds Statements  
(US\$ Million)

Fiscal Year	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	Total FY95-05
<b>Sources</b>												
<b>From Subprojects</b>												
<b>HUBCO:</b>												
Interest	33.8	51.3	58.8	78.7	75.9	75.9	75.9	75.9	75.9	74.2	72.1	748.4
Repayment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.4	17.0	19.1	49.5
Loan Fee	1.3	1.9	1.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	28.8
<b>OTHER PROJECTS:</b>												
Interest	5.5	17.3	22.9	22.9	21.6	21.6	21.6	21.6	21.6	19.8	17.7	214.2
Repayment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	16.3	18.4	49.3
Loan Fee	0.2	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.7	8.4
<b>Subtotal</b>	<b>40.8</b>	<b>71.1</b>	<b>84.3</b>	<b>105.5</b>	<b>101.4</b>	<b>101.4</b>	<b>101.4</b>	<b>101.4</b>	<b>129.3</b>	<b>131.1</b>	<b>130.9</b>	<b>1098.6</b>
<b>Capital Raised</b>												
IBRD	161.0	106.0	46.2	58.5								371.7
USAID/EXIM BANK	3.1	25.7	2.8	0.0								31.7
ITALY	50.1	0.0	0.0	0.0								50.1
JEXIM	51.0	78.0	46.0	83.0								258.0
ODA	0.0	0.0	0.0	0.0								0.0
FRANCE	29.9	10.0	0.0	0.0								39.9
<b>Subtotal</b>	<b>295.1</b>	<b>219.7</b>	<b>95.0</b>	<b>141.5</b>								<b>751.3</b>
<b>Other Income</b>												
Proj. Mgt. Fee	0.5											0.5
Leg. Doc. Fee	0.2											0.2
Commitment Fee	4.7	3.0	2.3	1.1	1.1	1.1	1.1	1.1	1.3	1.5	1.8	20.0
Proj. Mon. Fee	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5.5
Interest Income on Equity Resrv.	1.2	2.4	2.5	4.1	5.1	4.0	3.0	2.1	3.5	5.3	6.2	39.4
<b>Subtotal</b>	<b>7.1</b>	<b>5.9</b>	<b>5.3</b>	<b>5.7</b>	<b>6.7</b>	<b>5.5</b>	<b>4.5</b>	<b>3.7</b>	<b>5.3</b>	<b>7.3</b>	<b>8.5</b>	<b>65.6</b>
<b>Total Sources</b>	<b>342.9</b>	<b>296.8</b>	<b>184.6</b>	<b>252.7</b>	<b>108.1</b>	<b>106.9</b>	<b>105.9</b>	<b>105.1</b>	<b>134.6</b>	<b>138.4</b>	<b>139.4</b>	<b>1915.4</b>

PAKISTAN  
Private Sector Energy Development Project  
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Sources and Applications of Funds Statements  
(US\$ Million)

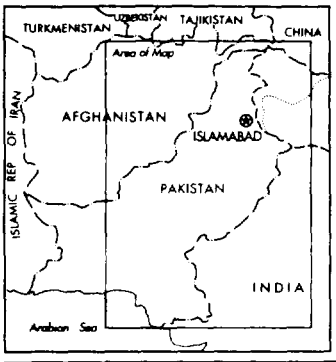
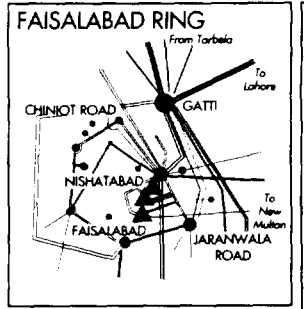
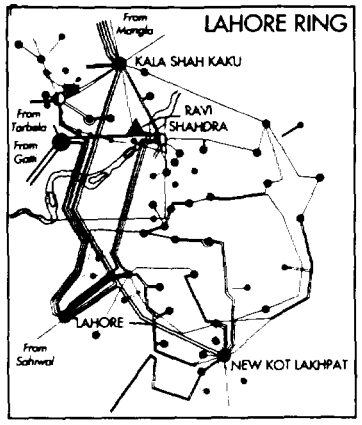
Annex 3  
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Fiscal Year	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	Total
<b>Applications</b>												
<b>Disbursements</b>												
HUBCO:	254.1	130.7	53.0	166.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	603.8
OTHER PROJECTS:	41.0	99.0	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	182.0
<b>Subtotal</b>	<b>295.1</b>	<b>229.7</b>	<b>95.0</b>	<b>166.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>785.8</b>
<b>Debt Service 1/</b>												
IBRD	12.0	19.8	23.3	27.6	27.6	49.5	49.5	49.5	49.5	49.5	49.5	407.4
USAID	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	12.0
ITALY	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	5.4	11.0
JEXIM	3.0	7.5	10.1	15.0	15.0	25.9	25.9	25.9	25.9	25.9	25.9	170.0
ODA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FRANCE	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.5	12.6
NORDIC INV. BANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Subtotal</b>	<b>17.5</b>	<b>30.2</b>	<b>36.3</b>	<b>45.5</b>	<b>45.5</b>	<b>78.3</b>	<b>78.3</b>	<b>78.3</b>	<b>78.3</b>	<b>78.3</b>	<b>84.4</b>	<b>650.8</b>
Foreign Exch. Prem. Res.	17.6	30.8	36.6	45.1	45.1	43.2	41.1	38.9	36.5	34.0	30.9	399.9
Operating Fee	0.7	1.2	1.5	1.8	1.8	3.1	3.1	3.1	3.1	3.1	3.4	26.0
Equity Reserves	12.0	4.8	15.3	-5.7	15.7	-17.7	-16.6	-15.2	16.6	23.0	20.7	52.9
<b>Total Applications</b>	<b>342.9</b>	<b>296.8</b>	<b>184.6</b>	<b>252.7</b>	<b>108.1</b>	<b>106.9</b>	<b>105.9</b>	<b>105.1</b>	<b>134.6</b>	<b>138.4</b>	<b>139.4</b>	<b>1915.4</b>
<b>Cumulative Equity Reserves</b>	<b>12.0</b>	<b>16.8</b>	<b>32.0</b>	<b>26.4</b>	<b>42.1</b>	<b>24.4</b>	<b>7.8</b>	<b>-7.4</b>	<b>9.2</b>	<b>32.2</b>	<b>52.9</b>	<b>52.9</b>

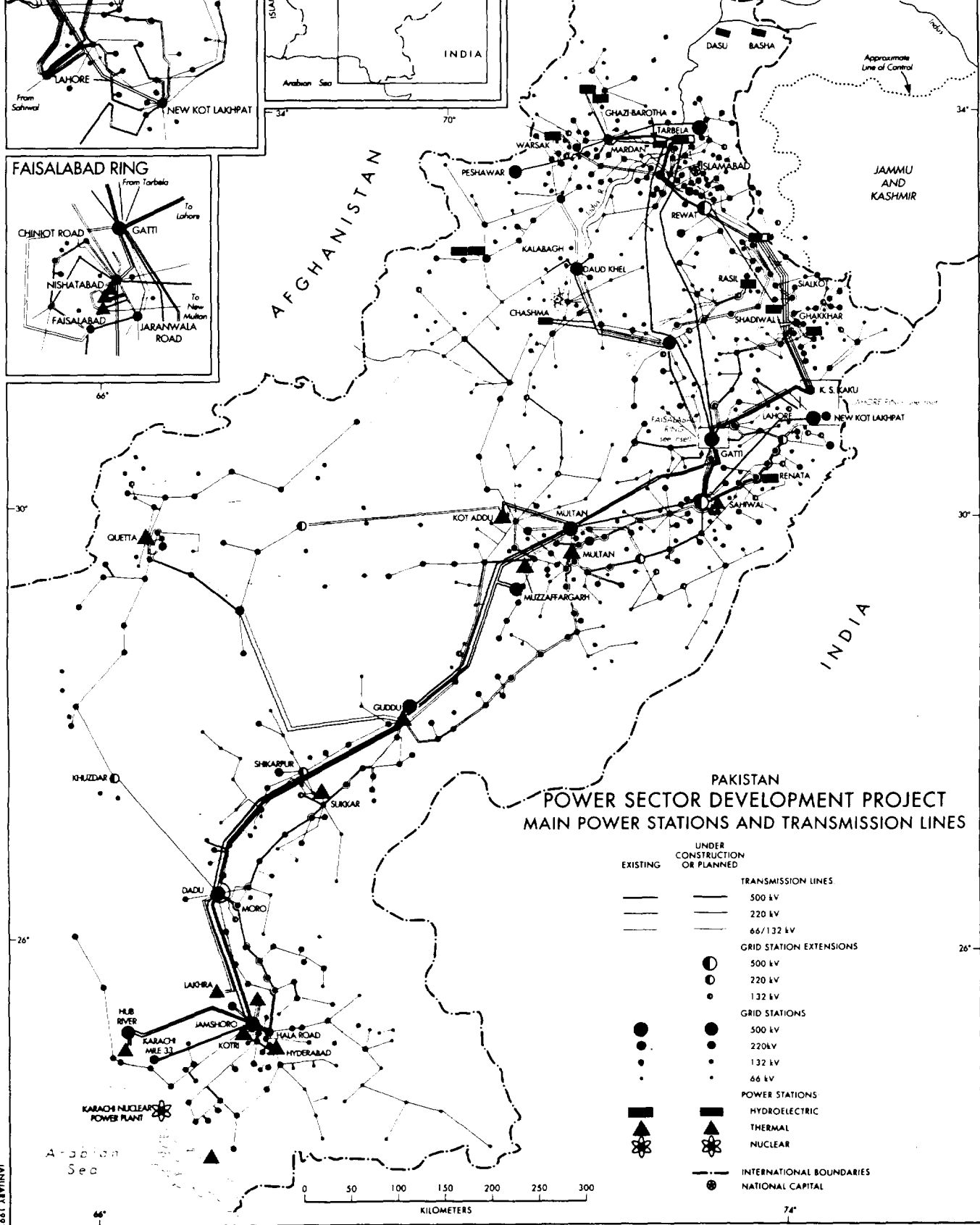


MAP

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**PAKISTAN  
POWER SECTOR DEVELOPMENT PROJECT  
MAIN POWER STATIONS AND TRANSMISSION LINES**

EXISTING	UNDER CONSTRUCTION OR PLANNED	TRANSMISSION LINES
—	—	500 kV
—	—	220 kV
—	—	66/132 kV
		GRID STATION EXTENSIONS
	○	500 kV
	○	220 kV
	○	132 kV
		GRID STATIONS
●	●	500 kV
●	●	220 kV
●	●	132 kV
●	●	66 kV
		POWER STATIONS
▲	▲	HYDROELECTRIC
▲	▲	THERMAL
☼	☼	NUCLEAR
—	—	INTERNATIONAL BOUNDARIES
●	●	NATIONAL CAPITAL