USAID/Pakistan - Evaluation of the Hab River Power Group's (HPRG) Proposal

FINAL REPORT

June 7, 1989

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Mr. T. David Johnston
Chief, Office of Energy and Environment
USAID/Pakistan
18-6th Avenue
Ramna-5, Islamabad, Pakistan

Dear Mr. Johnston:

Re: Financial Sector Development Project (FSDP)
Contract No. PDC-2206-Z-00-8191-00
USAID/Pakistan - Evaluation of the Hab River Power Group's (HRPG) Proposal

Attached please find three copies of the Draft Final Report of the Evaluation of the Hab River Power Group's Proposal. Additional copies have been forwarded to Sandra Frydman, AID/PRE Project Officer, Bob Archer, AID/ANE, and the WAPDA officials negotiating in Washington.

On behalf of Jim Waddell and the Project team, we would like to thank USAID/Pakistan staff for its support. We await any comments on this Draft Final Report, which we would be happy to incorporate in the Final Report.

Should you have any questions, please contact me at (202) 861-6294, Jim Waddell, Team Leader at (202) 861-6291, or Mark Camstra, FSDP Deputy Director, at (202) 861-6297. It has been a pleasure working with USAID/Pakistan on this important engagement and we are looking forward to working with you again in the future.

Yours Very Truly

Richard Breen
Project Director, FSDP

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I. INTRODUCTION

A. Background

The Government of Pakistan's (GOP) Seventh Five-Year Economic Plan includes a substantial increase in the installed generating capacity of the country. To achieve the goals of the Seventh Five-Year Economic Plan, considerable capital investment in energy generating plants is required. In this context, the GOP has requested private sector groups to submit proposals for investments in power generation plans. One of the proposals received by the GOP involves construction of a 1200 MW power complex near the mouth of the Hab River, approximately 40km from Karachi.

As part of the AID/PRE's Financial Sector Development Project (FSDP), USAID/Pakistan tasked Price Waterhouse with the evaluation of the Hab River Power Group's (HRPG) proposal. A team of consultants consisting of one independent lawyer, one financial advisor from Shearson Lehman Hutton, and three Price Waterhouse consultants were appointed by Price Waterhouse to this project. The team assembled in Pakistan between April 24 and May 4, 1989 to carry out this engagement. In addition to the Price Waterhouse team, John Sachs, a lawyer contracted directly by A.I.D., accompanied the team to Pakistan.

B. Project Objectives

The objectives of this project consisted of assisting the GOP in:

- Performing a contract analysis and reviewing the commercial aspects of the Implementation Agreement (IA) drafted by the sponsors
- Reviewing the financial aspects of the HRPG proposal and identifying the capital market constraints impacting the project
- Evaluating the financial risks and exposures for the various parties involved in the project.

C. Approach and Methodology

The methodology and approach adopted by the project team consisted of:

- Meeting with A.I.D. and World Bank officials in Washington D.C. to discuss the project and obtain the background material related to the HRPG proposal
- Reviewing the material provided by A.I.D., including the Preliminary Information Memorandum (PIM) issued by the Morgan Grenfell & Co. Limited
- Meeting with USAID/Pakistan and the GOP officials to discuss the background and the requirements of the project
- Reviewing the selected financial aspects of the feasibility study performed for the HRPG by K & M Engineering and Consulting Corporation to assess the reasonableness of the methodology used and the conclusions reached
- Obtaining and reviewing the computer model developed by the sponsor's financial advisors
- Performing financial analysis of the proposed construction and operating plan by using the computer model and identifying the capital market constraints impacting successful implementation of the power project
- Performing a risk analysis to evaluate the risks and exposures for the various parties involved in the project
- Performing a contract analysis of the Implementation Agreement to evaluate the legal and commercial implications of the HRPG proposal.

The general work was divided among the team members as follows:

- The Price Waterhouse team leader and the two lawyers spent one week with the GOP representative, Mr. Akram Khan, scrutinizing the Implementation Agreement (IA)

and other agreements having common elements with the IA (e.g., the Power Purchase Agreement).

- The Shearson Lehman Hutton investment banking specialist reviewed the financial packaging of the proposal and traveled to Karachi and discussed with the various banking and stock exchange authorities as well as potential private investors the reasonableness of the assumptions for raising the equity and debt. The investment banking specialist also contacted informally various potential off-shore investors including export credit Agencies.

- The Price Waterhouse financial analysts spent two weeks in Pakistan reviewing the computer model developed by Morgan Grenfell and the feasibility study commissioned by the project sponsors to K & M Engineering and Consulting Corp, and commencing the various facets of the financial analysis.

- Based on the work performed in Pakistan, a Preliminary Draft Report was delivered to the USAID/Pakistan prior to leaving the country. The Draft Final Report incorporates the results of the SLH desk review in New York and the PW quality control review in Washington, DC., as well as additional information developed since the team's return from Pakistan.

II. CONTRACT ANALYSIS

The contract analysis consisted of a review of the key aspects of the Implementation Agreement (IA). The basis for this review was a draft prepared by the HRPG, dated April 18, 1989. All the major points of concern resulting from the review of the Implementation Agreement were discussed with the GOP representative and the independent legal advisor to GOP.

A. Delays

The Implementation Agreement, as drafted, does not adequately protect GOP from potential delays in construction and start of operation of the plant. We believe that under the current Implementation Agreement the Company is not assuming a reasonable amount of risk for delays. We have redrafted the Force Majeure provisions in order to provide adequate protection against delays that are within the control of the Company. (These and other referenced drafts have been provided to the GOP.) Furthermore, we have clarified the definition of Force Majeure so that no party may invoke Force Majeure unless the Force Majeure event is beyond the reasonable control of the party experiencing such delays or failure, i.e. if the Company contributes to, or is the cause of Force Majeure, it shall not be entitled to a Force Majeure defense under the Implementation Agreement.

The following are some of the major deficiencies in the Implementation Agreement which need to be rectified before the Implementation Agreement is approved and signed by the parties:

- The Force Majeure clause Article 17, is one-sided and only provides an excuse for Force Majeure events to the Company and not to the GOP. We have redrafted Article 17 to provide for reciprocal rights and obligations under Force Majeure; alternatively, the Implementation Agreement could provide a Force Majeure defense to the Company if the Power Purchase Agreement (PPA) contains a reciprocal Force Majeure clause.

- The Implementation Agreement provides a projected time table, but contains no schedule of milestones which must be met by the Company in constructing the plant. It is essential to have milestones in Implementation Agreement or in the PPA which must be met in

construction and to include "penalties" for the Company's failure to meet those milestones.

- Under common law principles, contracts may not provide for penalties, thus, the milestone/penalty provisions should be written as "liquidated damages"; that is, it is reasonable to assume that the GOP or WAPDA will be damaged in a liquidated amount if the Company fails to meet a given milestone. We would recommend avoiding the use of the terms "penalty" in the agreement because of the reluctance of common law courts to enforce such provisions in contracts. In contrast, liquidated damages clauses are generally upheld.

- Clause 17.4 of the draft Implementation Agreement addresses failures or delays caused by Force Majeure. We have redrafted that provision to make it reciprocal, so that either the Company or GOP may invoke Force Majeure. Under that proposal, in the event of Force Majeure, the party which is experiencing any failure or delay in complying with any obligation under the Implementation Agreement is to be granted an additional period of time for performance of its obligations for a period of time commensurate with the failure or delay. We have also included a provision so that if any Force Majeure delays one party's performance for a period of time of greater than 12 months the other party has the option to terminate the agreement without further obligation. This is intended to restrict the Company's right to invoke Force Majeure.

B. Costs

The level and structure of electricity price re-openers that are proposed will be covered by the purchase power agreement and not by the Implementation Agreement. They therefore are not addressed in this report.

C. Arbitration/Disputes

The general provision for resolution for disputes is found in Clause 24 of the Implementation Agreement, the arbitration provision. One conceivable method for resolving disputes is by referring the matter to an expert of "international repute". The procedure for selecting the expert should be specified, perhaps based on a similar provision in the PPA.

The Implementation Agreement is unclear as to whether disputes that are resolved by an expert are subject to arbitration after the expert has rendered his opinion. One possibility is to make the expert's opinion final and binding on the parties and not subject to appeal to a panel of arbitrators. The Implementation Agreement does not clarify whether the expert's opinion is intended to be final and binding or whether it is subject to arbitration. There may be good reasons to utilize the expert opinion method of dispute resolution because it would be quicker and more efficient than arbitration. If this is the decision, then the Implementation Agreement must clarify this point.

Our assumption is that the parties want to preclude court actions to enforce rights or obligations under the Implementation Agreement. The Implementation Agreement should be clarified so that arbitration is the sole device for dispute resolution except for finding expert determination. The arbitration provision should be strengthened to make it clear that it is mandatory and covers both interpretations of the Implementation Agreement and breaches of the agreement.

A significant issue that has been left open in the Implementation Agreement is the failure to state what law should be applied in interpreting the agreement or in arbitration. When there is no clear law that defines a party's rights or obligations, that fact tends to encourage parties to litigate matters that otherwise could be settled or arbitrated quickly; therefore, we recommend that a choice-of-law provision should be included. GOP prefers that Pakistani law should govern. We believe that it is unlikely that the sponsors will agree to that. We recommend that if the parties reach an impasse as to choice-of-law, the law of the State of New York be adopted because it is perhaps the most developed body of commercial law. Its high level of development makes for certainty and ease of application that is important for dispute resolution. Also, as between Pakistani and U.K. law, New York law is "neutral".

In order to prevent the possibility that relatively small problems could escalate to the arbitration level and take years to resolve, it would be sensible to allow for expert determination of mundane disputes such as metering disputes. The parties could agree to make the expert's decision binding and not subject to further arbitration. Whether the dispute mechanism is through expert determination or arbitration, it is essential for the protection of WAPDA/NDFC/GOP to specify clearly which body of

law is to govern both resolution by an expert's opinion and by arbitration.

D. Division of Responsibilities

We analyzed the division of responsibilities between the sponsors, on the one hand, and NDFC/WAPDA/GOP, on the other. A key issue is why there is any need for the Implementation Agreement. The Implementation Agreement is unique. For example, in the United States the government would not be asked to guarantee the obligations of a utility. Yet it may be appropriate for the GOP to guarantee the obligations of WAPDA and the PSO since they are agencies of the GOP. However, since the GOP is willing to guarantee the obligations of WAPDA and PSO, the GOP should use that as negotiating leverage in asking the Company and the lenders to assume more responsibilities and risks than the draft Implementation Agreement has included.

As noted above, we have redrafted the Force Majeure clause to make it reciprocal so that both the Company and the GOP may invoke Force Majeure as an excuse for the performance of obligations, if the Force Majeure event is beyond the reasonable control of the party invoking the Force Majeure. We believe that the responsibilities of the GOP should be limited to the extent possible. For example, the GOP should not directly be called upon to make advances (Special Temporary Funding, or "STF") to the Company during Force Majeure events. We should explore whether NDFC can be utilized to provide funding for the STF. The availability and timeliness of STF will be better assured through such a vehicle. We recommend that, the Company, the construction firm, the operating companies, and the lenders be called upon to assume greater risks and greater responsibilities, since the GOP has indicated its willingness to guarantee the obligations of WAPDA and PSO - a significant concession for the GOP. In particular, the GOP should not be called upon to guarantee the Company's profits over the 23 year time span of the Implementation Agreement under Force Majeure. At most, the Company and a Force Majeure event should guarantee debt service payments to the lenders. We should explore whether, in the event of a political Force Majeure, the investors should receive some additional compensation as a return on investment. Maybe in such circumstance a more modest ROE, e.g., 8%, might be appropriate.

E. Risk Analysis

Because the GOP is willing to guarantee the obligations of WAPDA and PSO, both the shareholders of the Company and the lenders should be called upon to accept greater risk in the event of Force Majeure and otherwise. Indeed, the proposed 18% real return on equity is quite favorable for perspective investors and that fact alone warrants asking the investors and the lenders to assume greater risks. Many of the risks to the electricity supplier can be reasonably protected against through insurance coverage. Catastrophic and business interruption insurance coverage should be explored carefully. Natural disaster Force Majeure events can probably be insured against to protect all parties including the donor agencies.

F. Liabilities

The current draft of the Implementation Agreement places open-ended liabilities on the GOP and is overly protective of the Company and the lenders. We believe that the Implementation Agreement should be redrafted to make it more even-handed and to spread the risks more evenly among the GOP, the Company, and the lenders. As noted, the Force Majeure clause can be rewritten to make it reciprocal. Further, we believe that the Force Majeure should be limited as an excuse for failure to perform. Force Majeure should be invoked only where the performance of a party's obligation is due solely to circumstances beyond the reasonable control of that party. The party claiming Force Majeure should also be required to use its best efforts to remedy its inability to perform in the shortest possible time. Further, the suspension of the performance should in no event be of greater scope and no longer duration than is required by Force Majeure. Finally, if any Force Majeure delays a party's performance more than one year, the other party should have the option of terminating the agreement without further obligation.

G. Proposed Contract Documents

One concern is that the Implementation Agreement refers to a number of contract documents that apparently have not yet been drafted, including the Escrow Agreement. These agreements need to be reviewed carefully. In addition, it is essential that all of the contract documents be carefully coordinated. For example, the provisions in the Power Purchase Agreement must be consistent with the provisions in the Implementation Agreement. Further,

legal terms of art used in these agreements should be used in a consistent manner. For example, section 3.1 (f) of the Implementation Agreement refers to "internationally accepted standards," whereas the Power Purchase Agreement refers to "prudent utility practice". In order to avoid confusion and ambiguity, one term or the other should be utilized throughout all agreements.

H. Conflicts of Interests and Conclusions

As the Implementation Agreement is currently drafted, it is essential that the dispute resolution mechanism be clarified. Perhaps the best way of avoiding arbitration of relatively minor issues is to allow an expert to determine such issues and to provide in the Implementation Agreement that such expert determination will be final and binding and not subject to further appeal through arbitration or other litigation. The arbitration process itself must be interpreted by some defined body of law. As noted above, the current version of the Implementation Agreement does not specify any governing law. As noted, if the parties cannot agree on Pakistani law, we recommend that a provision be inserted in the Implementation Agreement which provides that the law of New York State shall govern the agreement.

The proposed structure of the various agreements should be sufficient to give sufficient comfort to the shareholders and lenders while at the same time not asking the GOP to make guarantees or commitments beyond what is absolutely essential. Since as a practical matter, WAPDA and the PSO are government-owned and operated agencies, we do not see any significant down-side risk in having GOP guarantee the obligations of WAPDA and PSO. This government guarantee can and should be used as negotiating leverage with the sponsors and lenders in encouraging them to take a greater share in the risks of the project.

It is important that the Implementation Agreement be structured in a manner so that the Company will have incentives to meet construction schedules and milestones. Furthermore, it is essential that disputes be resolved quickly and expeditiously and without lengthy, drawn-out litigation. As noted, perhaps a sensible way of avoiding drawn-out litigation is to refer to a well defined body of law that is neutral to UK and Pakistan. If there is no clear statement of governing law, there doubtless will be difficulty in the arbitration process.

III. FINANCIAL ANALYSIS

A. Introduction

We have conducted a review of the financing proposal of the Hab River Project as prepared by the Hab River Power Group (HRPG) with a view to assisting the GOP in its current negotiations with the Sponsors. Our review consisted of an assessment of the adequacy and feasibility of the proposed financing plan and identification of the capital market constraints impacting the project. We did not assess the reasonableness of the overall cost of the project as this was outside of our scope of work, and appears to have been addressed by the Burns & Roe study.

As part of our analysis, we evaluated the sufficiency of financing plan and the appropriateness of the assumptions made by the sponsors in relation to the total project costs, the timing, the market receptiveness, and the foreign exchange versus local currency requirements. In addition, we also identified the risks associated with the project and evaluated the mechanism to allocate and control the project costs.

Section B below briefly discusses the sponsor's proposed financial plan and the HRPG financial model. Section C presents the results of the financial risk analysis. This involved conducting a number of sensitivity analyses of plausible pre-operating and operating scenarios to determine the likely effect on the project's ROE, cash flow, and foreign exchange requirements. The section concludes by highlighting pertinent financial risks/exposures on key project participants. Section D contains the result of a review of the financial packaging (both equity and debt financing) in the proposal to determine if adequate levels of financing would be forthcoming to complete the project. The impact of the HRPG project on the capital markets in Pakistan is discussed. Section E contains a number of overall conclusions drawn from the financial analysis portion of this engagement.

B. The Proposed Financial Plan

1. Brief Description

The total cost of the Hab River Power Project is currently

estimated to amount to $979 million. The sponsors plan to incorporate a limited liability company in Pakistan. This Company will be responsible for raising the necessary funds for the project. The current plan is to fund this project with 25 percent equity and 75 percent debt. The investment by the sponsors will be at about one-third of total equity with the balance to be raised from individual and institutional investors. According to the rules, PSEDF will provide no more than 30 percent of the total debt with the rest to be raised in the off- and on-shore markets. The sponsors are assuming that the PSEDF loan is a subordinated debt. As discussed below, this assumption does not seem to be correct. The return on equity (ROE) projected for the life of the project is 18 percent pre-tax in real terms protected against the greater of the local inflation and Rupee exchange rate depreciation.

2. The HRPG Financial Model

The team reviewed and utilized an updated version of the HRPG model given to it by Morgan Grenfell in London, as approved by the CEO of the Hab River Power Group in Washington, D.C. In the process of both reviewing the financial viability of the project as represented in this HRPG model and modeling a number of alternatives scenarios and sensitivity analyses, we identified no significant modeling deficiencies that would suggest that it either does not cover all necessary elements of a project financing, or properly calculate the relevant financial parameters (i.e., ROE, cash flow, foreign exchange requirements, etc.). Shearson Lehman Hutton reviewed the parameters of the model and found that it included all significant factors. Price Waterhouse concurred in this finding and determined that the above factors were correctly modeled in their mathematical relationships.

The model itself is quite large and necessarily complex. It is contained in a standard Lotus 1-2-3 (version 2) spreadsheet, approximately 1.2 megabytes large.

Some key characteristics of the model which contribute to its fundamental adequacy include:

- It focuses on determining return on equity (ROE), which is essential in assessing the attractiveness of the project to potential investors.

- It determines financial obligations (and interest roll-up) by strictly matching of sources and uses of funds in different relevant currencies.

Some areas of concern regarding the model which require clarification include:

- The price of Rs .977 per KwH reflects a load factor of 64.6 percent. At the guaranteed 60 percent load factor, the price per KwH would be substantially higher (approximately Rs 1.04 per KwH). While this does not necessarily affect the results of the financial sensitivity analysis carried out below, it is an inconsistency that must be resolved in negotiating the tariff.

- The calculation of revenues is not separated by component, but is based on an average revenue of Rs .977. It would have been useful to segregate the calculation of revenues by, for example, separate energy and capacity charges, and have variations in these charges adjust automatically in the model under varying operating conditions.

- The ROE calculation assumes a 100 percent dividend payout, which does not necessarily reflect the reality of having to maintain retained earnings to support likely additional capital requirements during operational years.

- The working capital assumptions are not clear and the method of calculation somewhat awkward and difficult to follow. There are a number of questions regarding working capital that, due to lack of clarity in the model, must be clarified during negotiations, such as whether or not Dependable Capacity should be paid each month in advance.

- It is anticipated that debt service will not begin until the plant comes online. However, the Group's model analysis shows cash outflows for debt service beginning in 1989. This is reflected in the Foreign Exchange Tables. The issue of debt service timing is yet to be resolved.

- The model is structured on an annual basis, for the most part, and a semiannual basis for financing costs. For most purposes, this level of detail is sufficient.

In some cases, however, the magnitude of certain costs is significant on a monthly basis and annual estimates are less precise. Examples include:

- Interest is earned on cash accumulated for dividend payments and debt service. The average balances maintained for these payments are substantially higher than the end-of-year values on which interest in calculated.

- Commissioning of units ends interest roll-up and begins tariff payments. Variation of commissioning dates by several months will have a perceptible effect on the tariff.

C. Financial Risk Analysis

1. Introduction

This section contains the results of the financial analysis portion of engagement, including the impact of a number of sensitivity scenarios on the HRPG project's ROE, cash flow, and foreign exchange requirements.

The financial risk analysis contains a number of elements. Section 2 contains the results of the sensitivity analysis. A number of plausible scenarios, covering both pre-operating and operating periods, have been defined and a number of modeled sensitivities run on each in order to ascertain their impact on the financial viability of the project. Sections 3, 4 and 5 present a summary of the effects of the sensitivity analysis on the project's return on equity (ROE), cash flow and foreign exchange requirements of the project, respectively. Section 6 contains the results of an analysis to determine the financial risk/exposure of the various project participants, including the GOP, WAPDA, the Company, subordinated and non-subordinated sources of debt. Section 7 contains commentary on a number of additional issues pertaining to the financial viability of the project, as requested by the GOP.

Appendix A contains the detailed output, including scenario descriptions and various exhibits, of the financial analysis, the results of which are summarized below.

2. Sensitivity Analysis

A number of plausible scenarios that could affect the project's financial results in the pre-operating and operating years were defined. Using the HRPG financial model, sensitivity analyses were run on each scenario to determine if any set of plausible circumstances might affect the fundamental financial viability of the project, and put any parties at financial risk. Appendix A contains a detailed description and the output of the sensitivity analysis exercise.

The scenarios, their definition, and the results of the sensitivity analysis are summarized below:

a. Bonus payment adjustment: The company attains a sustained capacity factor above the proposed 60 percent during the operational years.

As Exhibit A.1 shows, the bonus payment arrangement appears to provide a reasonable revenue upside potential for shareholders, and provides an incentive for the Company to ensure that the plant operates at a higher capacity factor. Assuming that the Company is able to operate the plant at an 85 percent capacity factor, and that it earns a bonus equivalent to 0.1 Rs/kWh above 60 percent, the ROE in real terms would increase to 21.9 percent. This by itself provides a strong incentive to run the plant as efficiently as possible, thereby providing WAPDA with additional power at a cost much lower than the cost of load-shedding.

b. Penalty adjustment: The Company fails to attain a 60 percent capacity factor during the first five years of operations.

As Exhibit A.2 demonstrates, operating the plant at a capacity factor lower than 60 percent, resulting in the application of a penalty of .3 Rs/KwH below the 60 percent capacity factor, has a detrimental impact on ROE, thereby providing the company with an incentive to be efficient. For example, assuming that the plant is run at a capacity factor of 45 percent, and as a result the Company is forced to pay a penalty of 0.3 Rs/kWh below 60 percent, the ROE will be decreased to 14.7 percent in real terms. Since the penalties do not fully

compensate WAPDA for the loss of generation, the GOP is proposing termination if the capacity factor falls below 50 percent for a extended period of time.

c. Capital cost overrun: Total capital and pre-operating costs are higher than expected per pre-operating year.

As Exhibit A.3 shows, the financial performance of the Company is not overly sensitive to significant capital overruns in the pre-operating period. For example, assuming that the cost overrun is 20 percent, the reduction in ROE would be only 2.8 percent. However, the GOP needs to study the provisions in the construction contract to ensure that the sponsor is not insulated from this risk as it logical that the risk for cost overruns be borne by the sponsors.

d. Operational inefficiencies: A higher than expected heat rate increases fuel consumption per KwH.

As Exhibit A.4 demonstrates, ROE performance and cash flow adequacy are highly sensitive to increases in fuel consumption. Foreign exchange requirements, on the other hand, are reduced, reflecting decreased dividend payments. Under circumstances such as this, the Company clearly will have an appropriate incentive to improve on its operational efficiency in order to gain a higher ROE.

e. Alternative tariffs: Alternative tariffs are applied to determine their effects on financial performance.

As Exhibit A.5 demonstrates, the ROE performance and cash flow adequacy are highly sensitive to changes in the tariff. WAPDA's position that the tariff be maintained at 0.88 Rs/kWh will generate a ROE of only 9 percent, which is not likely to be sufficient to attract both on- and off-shore investors. This highlights the fact that any tariff reductions must be negotiated tougher with reductions in overall Company costs.

f. Dividend withholding tax: The GOP applies a withholding tax on both foreign exchange and Rupee denominated dividends.

The HRPG proposal assumes that no taxes will be paid in Pakistan on the dividends or interest earnings. The GOP position is that the earnings will be taxed in some other country, hence there is no reason why the GOP should not tax the earnings and let the investor claim a tax credit in their home country. The main problem is that the marginal tax rates in Pakistan are much higher than other countries.

If the GOP applies a modest withholding tax on both foreign exchange and Rupee denominated dividends, as the Exhibit A.6 shows, ROE performance and cash flow adequacy are not particularly affected. As it can be seen, should the GOP apply a dividend withholding tax of 10 percent, real ROE would fall to 16.1 percent. And, from the GOP perspective, foreign exchange requirements would be diminished, reflecting reduced dividend repatriation. However, it should be noted that a withholding tax of over 15 percent applied on local investor earnings would result in their not being able to claim tax credit. This would discourage the potential local investors since it would reduce the ROE further, thus making the investment less attractive.

g. Dividend conversion difficulties: Offshore investors suffer delays of up to one year in converting dividends over the life of the project.

We have analyzed the situation where offshore investors suffer delays of up to one year in converting dividends over the life of the project. As the Exhibit A.7 shows, the ROE performance and the cash flow and foreign exchange requirements are not particularly sensitive to conversion difficulties. ROE would be reduced by only 1.5 percent if the income was forgone at an annual real interest rate of interest as high as 22 percent. A delay in convertibility will not have any effect on the cash flow requirements, while the foreign exchange requirements will be reduced somewhat due to the delay in repatriation of dividends. However, the fear of non-convertibility is a major risk factor for the foreign investor.

h. Higher working capital requirements: Working capital requirements are higher than planned.

If working capital requirements are higher than planned, the financial viability of the project would suffer, possibly significantly. As Exhibit A.8 demonstrates, the financial performance is highly sensitive to unplanned increases in working capital requirements. For example, a 10 percent increase in working capital requirements would reduce ROE by 4.9 percent, and the cash flow and foreign exchange levels would be reduced considerably. This underscores the importance to financial viability of proper management of the facility.

i. Placement difficulties: The Company is unable to place all of the planned offshore equity during the first four pre-operating years.

Difficulty in placing all of the planned offshore equity during the first four pre-operating years could require a draw-down of the overdraft facility. As the Exhibit A.9 demonstrates, the ROE performance and the cash flow and foreign exchange requirements are not necessarily highly sensitive to placement difficulties, assuming that these do not result an inability to set up the facility. Under this scenario, a placement of only 25 percent of the total required equity would reduce the ROE by only 0.6 percent, while the cash flow and foreign exchange short-falls would be $22m and $4m respectively over the life of the project. However, a placement difficulty would result in a major increase in risk to other lenders, and may seriously compromise the financial viability of the project.

3. Return on Equity (ROE)

Based on the analysis above, a number of observations can be made with respect to the sensitivity of the project's ROE:

- On the upside, ROE is most affected by the bonus adjustment. Assuming sustained capacity factors of 65, 75 and 85 percent, ROE would climb to 19.1, 20.5, and 21.9 percent, respectively. This indicates that the bonus scheme provides the Company with a reasonable incentive to be efficient, and that the shareholders stand to benefit from efficient operations.
- On the downside, ROE is highly sensitive to operational inefficiencies resulting in a higher fuel consumption, as well as adverse adjustments to working capital

requirements. This highlights the fact that the financial viability of the project could be threatened by operational factors, suggesting that the Company could be at significant risk if it does not operate the facility as efficiently as possible.

Additionally, a review of the impact on ROE of alternative tariff assumptions leads to a number of observations regarding the financial viability of the project. Note that in modeling alternative tariffs, no changes were made to the fundamental cost structure as proposed by HRPG (see Exhibit D in Appendix A):

- A tariff of Rs .977/kWh will yield an ROE of 18.3 percent. As indicated in the PIM, and subsequently confirmed during field interviews, it is anticipated that a return on equity of approximately 18 percent will be required to raise the necessary equity financing from both onshore and offshore sources.
- A tariff of Rs .88/kWh, as originally proposed by HRPG and as still desired by WAPDA, results in an ROE of 9 percent, which is not likely to attract the necessary investment. This indicates that ROE performance as determined in the HRPG financial model is highly sensitive to a reduced tariff, and that any tariff reduction from the HRPG's currently expected tariff of Rs .977/kWh will have to be made together with reductions in overall project costs in order to keep ROE at acceptable levels.
- The "breakeven" tariff (i.e., that which will yield an ROE of 0 percent) is Rs .816/kWh.

4. Cash Flow

Based on the sensitivity analysis, there does not appear to be a likely, non-force majeure circumstance that would fundamentally undermine the financial stability of the project as measured by its cash flow. For example, projected cash flow does not in any instance become less than zero, either on a life of project or operational year-by-year basis, indicating that there is sufficient cash generated from operations, even under adverse circumstances, to pay off all loans.

As with ROE performance, however, project cash flows are

very sensitive to operational deviations from plan, such as higher fuel consumption due to operational inefficiencies and unexpectedly high working capital requirements. This reinforces the fact that the financial viability and stability of the project could be greatly diminished by operational factors, indicating that the Company, and its shareholders, could be at risk if it does not operate the facility efficiently.

5. Tariff

a. Components

According to the model, the components of the average tariff proposed by the sponsors are as follows:

Average tariff for the Year	Avg yrs 1-12	Avg yrs 13-23
Tariff Breakdown		
1. Foreign Fixed Costs	0.025	0.025
2. Local Fixed Costs	0.024	0.024
3. Insurance	0.020	0.020
4. Fuel	0.425	0.425
5. Local Variable Costs	0.008	0.008
6. Foreign Spares	0.005	0.005
7. Debt Interest	0.169	0.030
8. Loan Repayments	0.117	0.051
9. Exchange Risk Insurance	0.025	0.000
10. Supplementary Finance Charges	0.001	0.000
11. Cash for Shareholders	0.150	0.192
12. Construction Costs, Working Capital, etc.	0.009	0.001
	0.977	0.781

We have reviewed the calculation of these elements to ensure that they are accurate. These cost categories will be important in determining the structure of the power purchase tariff. We note that these cost elements are inconsistent with the last tariff proposal advanced by the sponsors, but we understand that the proposal will be up-dated during negotiations.

b. Escalator Provisions

The proposed escalation of the tariff is complicated because

of the large number of tariff elements that are calculated separately. The most difficult problem is the escalation of the equity return component. According to the sponsors equity returns are to be maintained at 18 percent real return, for both dollar and Rupee investors.

Dollar investments are affected by both dollar inflation and exchange rate fluctuations. Rupee investments are affected by Rupee inflation. For any particular period of time, dollar returns and Rupee returns may change in different ways. Unless separate dollar shares and Rupee shares are issued, it is impossible to develop indices to ensure exactly an 18 percent ROE for both types of investors.

Use of a single escalator to protect both dollar and Rupee investors, however, may result in overprotection or underprotection for each type of investor. Consider the following example:

Rupee inflation	6.5 %
Dollar inflation	4.0 %
Rupee/Dollar devaluation	6.3 %

For dollar investors to maintain an expected real rate of return, the equity return component of the tariff must increase by 10.6 percent (1.04 times 1.063). This adjustment overprotects Rupee investors. If the return is adjusted by Rupee inflation only, dollar investors will assume a risk that their return will fall below the target ROE.

6. Foreign Exchange

Using project documents, we identified the foreign exchange requirements during the pre-operation and operation years. Exhibit E in Appendix A shows that the total foreign exchange required for the pre-operation costs amounts to over $757 million, while the foreign exchange required during the operating years amounts to over $3,052 million.[1]

The majority of the foreign exchange required during the

[1] The foreign exchange tables in Exhibit E are based on debt service beginning in 1989, in accordance with HPRG's model analysis. It is anticipated, however, that debt service will not begin until the plant comes online. The issue of debt service timing is yet to be resolved.

pre-operating years will be provided by the sponsors and spent for payment of the construction costs and rolled-up interest (i.e, 78% and 14% respectively). We do not feel that the level of foreign exchange required for the pre-operating costs is a major point of concern since the entirety of these funds will be provided by off-shore equity and debt raised by the project sponsors.

The foreign exchange required during operating years, however, will be mostly required to pay the debt service and the dividends on the foreign equity shares (i.e., 54% and 32% respectively). We understand that Pakistan has been experiencing foreign exchange shortages; as a result, there is a general concern about the ability of the Government to raise the necessary foreign exchange required to pay out the foreign exchange obligations. However, since the $3 billion in foreign exchange will be paid out during a period of 23 years, and the projected maximum yearly required foreign exchange does not exceed $169 million, the Government may be capable of meeting its foreign exchange obligations.

We were unable to obtain a further breakdown of the fixed and variable costs to quantify the total resident expatriate salaries from the project documents. However, we understand that WAPDA has raised some concern over the level of the compensation projected for use of expatriate staff as opposed to the local staff. We are of the opinion that the sponsors should be given some leeway in this matter, as the GOP is expecting the sponsors to assume all operational risks associated with this project. The sponsors must be able to attract highly competent staff to ensure the success of the project.

All the documents reviewed by the team assume that the cost of fuel will be incurred by the sponsors in local currency. Since fuel cost will be a major operating cost, the agreement between the Company and PSO is very important to the success of this project. Furthermore, whether purchased by the sponsors or the PSO, the fuel will be imported and paid for in foreign exchange. From a national perspective, the project's use of imported fuel will increase the demand for foreign exchange. Since the general availability of foreign exchange is a major risk of the project, we have separately identified fuel requirements.

The operational spare and maintenance costs have been included in the fixed and variable operating costs. We have not

been able to identify any provision for additional capital construction during the operating years. We believe that some provision for replacement of heavy machinery may be required to ensure that the plant will remain fully operational during the project life. While the financial plan includes routine maintenance, any major capital needs during the operating period must be met with equity finance. We are currently checking with Burns and Roe to determine whether the limited amount of retained capital (intended for share redemption) will be sufficient to provide for any probable repair needs.

7. Financial Risk

We analyzed the financial risk exposure for the various parties involved in the project resulting from changes in project operations and financing as defined in the sensitivity analysis. In addition to those scenarios prepared for the sensitivity analysis, we reviewed the risk impact of transmission problems limiting power production, inability of PSO to supply fuel oil, and changes of relative fuel prices in favor of coal. Exhibit B summarizes the different risk elements and grades the risks for the various players.

a. The Company

The Company will incur a major increase in financial risk under the following types of circumstances:

- Operational inefficiencies occur that result in moderate to significant increases in fuel consumption
- The tariff is reduced to a level below 0.977 (unless the overall cost structure of the project is reduced)
- Working capital requirements are moderately to significantly higher than expected.

The Company will incur a minor increase in financial risk under the following circumstances:

- It is unable to sustain a 60 percent capacity factor over the life of the project

- It is unable to place all of the planned offshore equity during the first four pre-operating years
- Capital and pre-operating costs are significantly higher than currently expected
- A dividend withholding tax is applied on dividend income
- Difficulties are encountered in converting dividends into foreign exchange
- Intermittent, non-force majeure transmission problems limit power sales
- PSO cannot supply fuel oil on a relatively sustained basis at a reasonable price.

c. The Government of Pakistan (GOP)

The GOP will incur a major financial risk if the PSO is unable to supply fuel oil at the agreed prices, while its financial risk will decrease somewhat should it impose a withholding tax on dividend income. The GOP is not likely to suffer a financial risk effect from the any other plausible circumstances as defined in the sensitivity analysis.

d. WAPDA

WAPDA would experience a major increase in financial risk if there is a significant change in relative fuel oil prices in favor of coal. It would incur a minor increase in financial risk under the following circumstances:

- The Company sustains a capacity factor in significant excess of 60 percent, gaining the benefit of the bonus provision over time
- Intermittent, non-force majeure transmission problems limit power sales
- PSO cannot supply fuel oil on a relatively sustained basis at a reasonable price.

WAPDA would incur no financial risk effect should there be capital cost overruns, operational inefficiencies, a dividend withholding tax, dividend conversion difficulties, higher than expected working capital requirements, and equity placement difficulties. The financial risks resulting from these circumstances would be borne by the Company and the shareholders.

e. Subordinated Debt Sources

Subordinated lenders would incur major increases in financial risk if:

- The Company is unable to sustain a 60 percent capacity factor over the life of the project and thereby have to pay penalties over time
- The Company experiences moderate to significant operational inefficiencies
- The Company's working capital requirements are moderately to significantly higher than expected.

They would incur minor increases in financial risk should there be capital cost overruns, equity placement difficulties, sales-limiting transmission problems, problems with obtaining supplies of oil, and changes in relative fuel prices in favor of coal. The imposition of a dividend withholding tax or difficulties in dividend conversion would is not likely to affect the financial risk profile of subordinated lenders. They would, in turn, experience a major decrease in financial risk should the Company sustain a capacity factor over 60 percent over time.

f. Non-subordinated Debt Sources

Non-subordinated debt holders are not likely to incur any major increases in financial risk under any the circumstances contained in this report and would experience no risk effect from most of other operating and financial scenarios. They could, however, experience a minor increase in risk should there be operational efficiencies and undue increases in working capital requirements over the life of the project.

8. Additional Comments

a. The K&M Feasibility Study

The team reviewed the financial aspects of the feasibility study performed for HRPG by K&M Engineering and Construction Corporation. This brief review indicated that the financial aspects of the feasibility study are reasonable, the methodology employed appropriate, and the conclusions reached sound in view of the methodology employed.

However, a key area addressed in the feasibility study, and one crucial to negotiations, is the tariff level. The tariff level promises to be an area of serious contention, as WAPDA is insisting on a tariff of Rs .88 as contained in the original LOI. HRPG, for its part, has put forward a tariff of Rs .977, as contained in the Tariff Reconciliation (Appendix 14.13) portion of the feasibility study. This tariff level is based on the original tariff of Rs .88 plus a number of post-LOI adjustments, including reopener amounts and a number of revised assumptions. Specifically, the sponsors have proposed increases in the tariff (based on the feasibility study) as follows:

- Capital and financing costs increased by 30.4 percent, from Rs .355 to 463 per kWh.
- Operations and maintenance costs increased by 34.4 percent, from Rs .064 to .086 per kWh.
- Fuel costs declined by 7.7 percent, from Rs. .461 to 428 per kWh.

WAPDA has, for its part, identified a number of areas where it believes that the HRPG proposal overstates costs. Specifically, WAPDA considers that:

- The sponsors have unacceptably raised the cost of the plant to meet their commitment of delivering a net output of 1200 MW.
- The proposed tariff with multiple components is inappropriate and proposes a simpler tariff structure consistent with the provisions made in the LOI agreed to by the sponsors (i.e., a base price of Rs .88 per kWh for the first twelve years, and Rs .70 for subsequent years).

- The project costs could be reduced if major equipment were procured through international competitive bidding.
- The cost of expatriate staff is too high.
- The sponsors could manage the Debt Escrow Account in such a way that it could earn/save money.
- The claim of the equity holders for payment of Export Credit Insurance Premium is not justified.
- The rates used to adjust for inflation (7 percent) and cover bride financing (18 percent) are not justified in any documented manner, and the level of interest rates used to adjust the LOI tariff are generally too high.
- The reduction in the fuel component of the tariff is not justified and may not materialize, particularly given the assumptions made about the expected level of fuel oil inventory.
- Any increases in the tariff due to late commencement and commissioning are not justified as the change in time is not WAPDA's responsibility.
- The sponsors have not given any details justifying their increasing of (a) the foreign portion of the capital cost from 68 to 89 percent and (b) the insurance charges.
- The fees to be charged on equity are very high when compared to the rate on other funding.
- The sponsor's O&M cost (Rs .07/kWh) is almost double that of WAPDA's own O&M cost for the whole of its Thermal Department (Rs .04/kWh).
- No downward adjustment was made to tariff for the non-provision of a jetty dock and barges (estimated at Rs .02/kwh).

Many of these cost reduction issues will be discussed during the upcoming negotiations. For present purposes, it is important to note that, as the financial analysis above demonstrated, imputing the WAPDA-preferred tariff of Rs .88/kWh into the HRPG financial model, which is configured to require a tariff of Rs .977/kWh, yields an ROE of approximately 9 percent. The conclusion was reached that, in order for the GOP to negotiate a

tariff below Rs .977/kWh and still allow the project to generate an ROE that will attract the necessary investment, there will have to be a reduction in project costs consistent with a reduction in the tariff.

D. Financial Packaging Review

We reviewed the financing proposal, both from equity and debt financing point of view, to determine if adequate financing would be forthcoming from on and offshore sources to complete the project. While we did not detect any general inadequacy in the overall financing plan, we believe that there are a number of points of concern to be taken into consideration.

1. Project Capital Structure

The project capital structure is divided by 75 percent debt and 25 percent equity. Electric utilities constructing central station generation in other parts of the world tend to have a capital structure of about 60 percent debt and 40 percent equity. A higher than normal proportion of debt financing could cause cash flow difficulties over time, particularly if revenues do not materialize as projected. The fact that the debt will be raised in the form of limited recourse borrowing may, however, ameliorate some of the cash flow problems that may occur.

2. Subordinated Debt

Significant issues relating to the basic structure of the financing have not been resolved. The Morgan Grenfell document mentions that PSEDF funding will be subordinated to other lenders (e.g., the export credit agencies and local commercial lenders). NDFC, who will be administering disbursal of the PSEDF funds, indicated that their current authorizations specify pari passu treatment with other lenders. NDFC mentioned a World Bank opinion that the long maturity of PSEDF lending constituted an element tantamount to subordination. While certainly attractive, a long tenor does not constitute subordination. Should a shortage of cash flow occur, senior lenders will want priority payment of interest and principal before payment of interest to subordinated lenders.

The subordination issue is critical because the export credit agencies will be asked to lend without a government or acceptable off-shore guarantee. Such lending, called "limited

recourse" or "project finance" lending, is unusual for export credit agencies, who will require proof of substantial protection. Such protection would typically include substantial equity and subordinated debt as well as irrevocable commitments to purchase output from the plant and to provide fuel to the plant.

The current structure of the Yumurtalik coal-fired plan in Turkey is a relevant example. The size of Yurmutalik, $1.5 billion, is comparable to the Hab River project. The Turkish Government has committed to providing subordinated loans to meet cash-flow deficiencies due to force majeure, completion delays or operating problems. The Government has been counter-indemnified by the project sponsors. However, it is critical to note that the senior lenders will look directly to the Government of Turkey to provide the necessary subordinated debt. The Government would then need to pursue its own legal remedies against the sponsors to collect on the counter-indemnities.

Thus the subordination issue must be resolved before further approaches are made to export credit agencies.

3. Export Credit Agencies

Given the project finance structure, the export credit agencies will require significantly longer to evaluate the project for approval. They will wish to extensively review and almost certainly modify the documentation, including the implementation agreement, the power purchase agreement, the fuel supply agreement, and probably the construction agreement, among others. Such a review will require six months at a minimum, and will not become effective until the equity and subordinated debt portions of the financing are explicitly in place.

We informally approached ECGD and JEXIM about their views on the project. ECGD had not yet received a formal application, but had held discussions with the World Bank. They felt that the information memorandum was extremely optimistic in tone. Although not able to judge until a formal application had been submitted, ECGD said that limited recourse financing applications had a low success rate. JEXIM informed us that they did not know the project was a BOT. In their view, they are expecting either a Republic of Pakistan guarantee or the extension of supplier credits to the Japanese members of the consortium. Such credits are the obligation of the companies involved, such as Mitsui or

Kumagai Gumi, and do not represent Republic of Pakistan risk. Suppliers are generally loath to undertake such obligations in a large project.

The export agencies should not be approached without a formal strategy agreed to by the GOP. Appropriate representatives of the GOP will probably need to be present during formal presentations. The GOP will not wish to be in a position of acquiescing to urgent requests from the financial advisors to the project sponsors on the grounds that a given request is imperative to success of the financing. In short, in view of their importance and special requirements, a clear-cut formal strategy must be developed to properly approach the export credit agencies.

4. Regulatory Constraints

There are a number of regulatory constraints inhibiting the efficient working of local capital markets that must be waived if local equity is to be raised. These include (a) the method of setting of the stock price of an initial offering, (b) limitations placed on converting debt into equity, and (c) underwriting restrictions placed on local financial institutions.

Regarding (a), current legislation requires the issue of shares at accounting book value. Such a price would grossly undervalue shares in the project. The value of shares lies in a high real rate of dividend return, not the accounting value of the plant and equipment less the value of debt outstanding. Legislation allowing the issue of shares at a premium to par would be necessary.

Regarding (b), debt conversion limitations, local investors are not likely to understand the concept of investing in the equity of a company which is not yet in operation. However, they may accept the concept of debt convertible into equity. A local investor active in Karachi believes that the latter might be an attractive proposition. In order to raise the necessary capital from local sources, measures will have to be taken to exempt Hab River bond issues from conversion limits now imposed by Pakistani law.

Regarding (c), Morgan Grenfell's document mentions the agreement in principle of Banker's Equity, Ltd. to raise an initial Rs 1.4 billion in equity. The document also states that

in order to raise local equity, the Letter Of Intent (LOI), which forbids local underwriting of equity, may need to be revised. The less-preferable alternative to a local equity issue would be an initial equity position held entirely by offshore investors, probably a combination of the sponsors and multilateral institutions.

5. Rates of Return

Locally, Karachi has a buoyant and receptive population of investors. The real rate of return put forward by BEL to raise the necessary equity capital (18 percent) would be highly attractive to those investors, especially since a multi-national construction and management team will build and operate the plant.

Externally, this ROE may be sufficiently attractive to raise the necessary capital from offshore investors, particularly Pakistani nationals. We have carried out limited discussions in London concerning the attractiveness of such equity returns to expatriate Pakistanis. The rate of return appears sufficient to appeal to non-resident Pakistanis, both as a classic investment and as an alternative source of Rupees. However, in order, to be completely attractive to expatriate Pakistanis, off-shore equity should be available in the form of "bearer shares".

On the debt side, the present financing plan envisages the obtaining of Rs 1 billion from local financing sources, either commercial banks or Development Finance Institution's (DFI's). The terms envisaged are a fixed rate of 15 percent with average lives of 10 and 12 years. These terms are unprecedented in local banking for a private enterprise. Moreover, the federal government itself would be in active competition for such funds.

6. Local Liquidity

As noted, the present financing plan involves raising 1 billion rupees locally. Sufficient local liquidity appears to exit to provide such funding. However, Pakistan is currently subject to an IMF Program. As part of that Program, the GOP has agreed to limits on the creation of domestic credit, both for the private and public sectors. According to the local banking community, Pakistan has currently breached the private sector ceiling and is very close to the public sector ceiling. A

billion rupee local financing would significantly affect such ceiling and would require careful coordination with other funding needs in the Pakistan economy.

7. Timing

It is important for the GOP to recognize that the Hab River Project is a large project financing by any standards. Such project financings require long lead times to achieve funding, and the GOP must set its expectations and determine its actions accordingly. The present thinking with regard to completion of financing arrangements as reflected by both the PIM and certain circles in the Pakistani government is extremely optimistic. Large private sector infrastructure projects such as the Hong Kong River tunnel project (a $1 billion project), for example, required 18 months to 2 years of negotiating to complete the financing arrangements. It will be virtually impossible to obtain financing commitments, both for debt and equity, in the time frame envisaged, which is currently end of year 1989.

8. Financial Advisory Services

As such, the GOP requires professional financial advisors to advise the Government on the implications and necessity of Proposals from the Sponsors as well as to advise on negotiating strategy. The financial advisors to the Sponsors will not be negotiating, necessarily, in the best interests of the GOP. The Government requires advisors that will be continuously available to respond to proposals, advisors with contacts in the export credit agencies and that have experience in raising debt and equity capital in international markets for Projects. Such a resource will free the GOP from a position of acquiescing to urgent requests from the financial advisors to the Project Sponsors on the grounds that a given request is imperative to success of the financing and will protect its interests in this large and complex project.

E. Financial Analysis Conclusions

A number of conclusions from the financial analysis component of this engagement are summarized as follows:

1. Sensitivity Analysis

- While there are some aspects that would have contributed to its adequacy, as well as some issues that must be clarified by the sponsors prior to or during the negotiations (particularly as it pertains to the load factor), the HRPG financial model appears to cover all the appropriate aspects of a project financing adequately and to calculate the relevant financial parameters of the project properly.

- Based on a sensitivity analyses, which modeled the effects of a number of plausible operating and financing-related scenarios, the project's financial performance in terms of ROE, cash flow and foreign exchange adequacy remains reasonably viable and stable over the course of project.

- The ROE and overall financial bank-ability of the project is highly sensitive to operational factors (e.g., fuel-dependent operational inefficiencies and working capital fluctuations), indicating that the Company and its shareholders could be at significant risk if the facility is not operated as efficiently as possible.

- Project cash flows and the financial stability of the project appear to be fundamentally sound, even under highly adverse circumstances. As with ROE performance, however, project cash flows are very sensitive to operational deviations from plan, reflecting the need for sound management of the operation.

- Foreign exchange requirements during pre-operating years do not seem to pose any problems to the financial viability of the project, as the Company will be providing the needed foreign exchange resources. Foreign exchange constraints may become important during operational years, however, as the GOP will be called upon to cover debt service and dividend payments out of its chronically-low foreign exchange reserves. That the projected maximum yearly foreign exchange requirements do not exceed $169 million suggests, however, that the GOP may be in a position to cover the project's foreign exchange requirements in a timely manner. Foreign exchange scarcity might therefore not play a decisive role in determining the Company's ability to raise the needed financing.

2. Financial Risk Analysis

- The Company's principal sources of financial risk are related to operational, as opposed to financial, factors, particularly in the areas of operational efficiencies (and their effect on fuel consumption) and working capital requirements.

- The GOP's principal sources of financial risk relate to PSO's ability to supply the needed fuel oil at a reasonable price and, more generally, to its capacity to cover the project's foreign exchange requirements.

- WAPDA's principal sources of financial risk include exogenous factors (changes in relative fuel prices in favor of coal) as well as project-specific factors, particularly the extent to which the Company sustains a capacity factor over 60 percent thereby capturing significant bonus payments.

- The principal sources of financial risk for subordinated lenders are basically those that affect the Company's risk; i.e., operational factors such operational efficiencies and working capital requirements. Non-subordinated lenders are exposed to the same types of risks that subordinated lenders are exposed to, but not to the same degree.

3. Financial Packaging Review

- Based on discussions with offshore investors, the proposed ROE of 18 percent appears to be sufficiently attractive to raise the necessary capital, particularly from Pakistani nationals who view it as both a classic investment and an alternative source of Rupees.

- Based on discussions with the export credit agencies, there is concern about the ability of the Company to raise all the required financing on a timely basis from both on- and off-shore sources without some form of concession or guarantee on the part of the GOP.

- The extent to which planned subordinated debt is truly subordinated is not clear, and remains an issue that needs to be resolved before approaching the export credit agencies.

- In view of their importance and special requirements, a clear-cut formal strategy must be developed to properly approach the export credit agencies.

- While the Pakistani financial system is sufficiently liquid to support the local debt funding requirements of the Hab River Power Project, it is currently running up against IMF-imposed limits on domestic credit expansion which may complicate the raising of local capital.

- The size and complexity of this project is likely to require more time than currently expected to negotiate the various legal arrangements on the one hand, and to raise the necessary financing on the other.

- There are a number of regulatory constraints inhibiting the efficient working of local capital markets that must be waived if local equity is to be raised, including (a) the method of setting of the stock price of an initial offering, (b) limitations placed on converting debt into equity, and (c) underwriting restrictions placed on local financial institutions.

APPENDIX A

FINANCIAL RISK ANALYSIS EXHIBITS

CONTENTS

AID/PRE - Financial Sector Development Project (FSDP)
USAID/Pakistan - Hab River Power Proposal Evaluation

Exhibit A.1
Bonus Adjustment

Sensitivity Analysis by Scenario

Scenario No. 1: The Company attains a sustained capacity factor above the proposed 60% during operational years.

Impact at capacity factor:		Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
		Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High =	85%	21.9%	3.6%	2,173	392	3,280	227
Medium =	75%	20.5%	2.2%	2,016	235	3,189	136
Low =	65%	19.1%	0.7%	1,859	78	3,098	45

Conclusions:

[1] Bonus arrangement provides a reasonable revenue upside potential for shareholders
[2] Bonus arrangement provides a reasonable incentive for Company to be efficient

Assumptions:

[1] Cash flow and foreign exchange requirements in US$ millions
[2] Bonus calculated at .1 Rs/KwH above 60% capacity factor
[3] All numbers expressed in real terms for life of project

Sensitivity Analysis by Scenario

Scenario No. 2: The Company fails to attain a 60% capecity factor during the first five years of operations

Impact at capacity factor:		Return on Equity (ROE) Adjusted ROE	Difference w/ Base ROE	Cash Flow (CF) Adjusted CF	Difference w/ Base CF	Foreign Exchange (FX) Adjusted FX	Difference w/ Base FX
High =	55%	17.1%	-1.3%	1,737	(44)	3,025	(28)
Medium =	50%	15.8%	-2.5%	1,694	(87)	2,997	(56)
Low =	45%	14.7%	-3.6%	1,651	(130)	2,969	(84)

Conclusions:

[1] Penalty arrangement provides a reasonable incentive for efficiency

Assumptions:

[1] Cash flow and foreign exchange requirements in US$ millions
[2] Penalty calculated at .3 Rs/KwH below 60% capacity factor
[3] All numbers expressed in real terms for life of project

AID/PRE - Financial Sector Development Project (FSDP)
USAID/Pakistan - Hab River Power Proposal Evaluation

Exhibit A.3
Capital Cost Overrun

Sensitivity Analysis by Scenario

Scenario No. 3: Total capital and pre-operating costs are higher than expected per pre-operating year

Percent cost overrun:	Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
	Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High = 20%	15.6%	-2.8%	1,648	(133)	2,971	(81)
Medium = 15%	16.3%	-2.0%	1,676	(105)	2,989	(64)
Low = 10%	17.0%	-1.3%	1,708	(73)	3,008	(45)

Conclusions:

[1] Financial performance not overly sensitive to significant capital cost overruns

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project

Sensitivity Analysis by Scenario

Scenario No. 4: A higher than expected heat rate increases fuel consumption

Percentage increase in fuel consumption:	Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
	Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High = 15%	12.0%	-6.3%	1,204	(577)	2,702	(350)
Medium = 10%	14.2%	-4.1%	1,395	(386)	2,819	(234)
Low = 5%	16.4%	-2.0%	1,587	(194)	2,936	(117)

Conclusions:

[1] ROE performance and CF adequacy are highly sensitive to increases in fuel consumption
[2] FX requirements are reduced reflecting diminished financial performance

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project

Sensitivity Analysis by Scenario

Scenario No. 5: Alternative tariffs are applied to determine effect on financial performance

Alternative tariffs:		Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
		Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High =	0.91	12.1%	-6.3%	1,279	(502)	2,747	(306)
Medium =	0.88	9.0%	-9.4%	1,055	(725)	2,610	(443)
Low =	0.85	5.6%	-12.7%	828	(953)	2,468	(585)

Conclusions:

[1] ROE performance and CF adequacy are highly sensitive to reduced tariffs
[2] FX requirements are reduced reflecting diminished financial performance
[3] Any tariff reductions must be negotiated together with reductions in Company costs

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project
[3] HRPG cost basis for determining Rs .977/kWh not adjusted

Sensitivity Analysis by Scenario

Scenario No. 6: The GOP applies a withholding tax on both foreign exchange and Rupee denominated dividends

Alternative tax rates:		Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
		Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High =	15%	15.0%	-3.3%	1,771.2	(9.6)	2,780	(273)
Medium =	10%	16.1%	-2.2%	1,771.2	(9.6)	2,864	(189)
Low =	5%	17.3%	-1.1%	1,771.5	(9.3)	2,953	(100)

Conclusions:

[1] ROE performance and CF adequacy are not overly sensitive to a modest tax increase
[2] FX requirements are diminished reflecting reduced dividend repatriation

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project

Sensitivity Analysis by Scenario

Scenario No. 7: Offshore investors suffer delays of up to one year in converting dividends over the life of the project

Forgone income at annual real interest rate:	Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
	Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High = 22%	16.8%	-1.5%	1,781	0	2,878	(175)
Medium = 18%	17.0%	-1.3%	1,781	0	2,905	(148)
Low = 14%	17.3%	-1.0%	1,781	0	2,934	(119)

Conclusions:

[1] ROE performance, CF & FX requirements are not overly sensitive to modest conversion difficulties

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project

Sensitivity Analysis by Scenario

Scenario No. 8: Working capital requirements are higher than planned

Working capital requirements higher by:		Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
		Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High =	10%	13.4%	-4.9%	1,321	(459)	2,775	(278)
Medium =	7%	15.0%	-3.4%	1,459	(322)	2,858	(195)
Low =	5%	16.0%	-2.4%	1,551	(230)	2,914	(139)

Conclusions:

[1] Financial performance is highly sensitive to unplanned increases in working capital rqrmt's

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project

Sensitivity Analysis by Scenario

Scenario No. 9: The Company is unable to place all of the planned offshore equity during the first four pre-operating years, requiring a drawdown of the overdraft facility

Percentage of total required equity placed:	Return on Equity (ROE)		Cash Flow (CF)		Foreign Exchange (FX)	
	Adjusted ROE	Difference w/ Base ROE	Adjusted CF	Difference w/ Base CF	Adjusted FX	Difference w/ Base FX
High = 75%	18.1%	-0.2%	1,773	(8)	3,051	(1)
Medium = 50%	17.9%	-0.4%	1,766	(15)	3,050	(3)
Low = 25%	17.7%	-0.6%	1,759	(22)	3,049	(4)

Conclusions:

[1] Financial viability and stability is not overly sensitive to equity
[2] placement delays, assuming these do not affect project commencement

Assumptions:

[1] Cash flow and foreign exchange requirements expressed in US$ millions
[2] All numbers expressed in real terms for life of project

AID/Pre-Financial Sector Development Project (FSDP)
USAID/Pakistan - Hab River Power Proposal Evaluation

Financial Risk Analysis

Exhibit B

Risk Element	RISK EFFECT ON: Company	GOP	WAPDA	Subordinated debt sources (NDFC)	Non-Subordinated debt sources
1. Bonus Payment Adjustment	-2	0	+1	-2	-2
2. Penalty Payment Adjustment	+1	0	-1	+2	-1
3. Capital Cost Overruns	+1	0	0	+1	0
4. Operational Inefficiencies	+2	0	0	+2	+1
5. Alternative Tariffs (<.977)	+2	0	-2	+2	+1
6. Dividend w/Holding Tax	+1	-1	0	0	0
7. Dividend Conversion Difficulties	+1	0	0	0	0
8. Higher Working Capital Requirements	+2	0	0	+2	+1
9. Equity Placement Difficulties	+1	0	0	+1	0
10. Transmission Probs. Limit Power Sales (non-Force Majeure)	+1	0	+1	+1	0
11. PSO cannot supply Fuel Oil (non-Force Majeure)	+1	+2	+1	+1	0
12. Changes in relative fuel prices in favor of coal	+1	0	+2	+1	0

KEY:

-2 = Major decrease in risk
-1 = Minor decrease in risk
+1 = Minor increase in risk
+2 = Major increase in risk
0 = No risk effect (neutral)

Financial Sector Development Project (FSDP)
USAID/Pakistan - Hab River Proposal Evaluation

Exhibit C

Impact of Alternative Penalty/Bonus Arrangements

Average Annual Capacity Factor	Annual Revenue at 60% Capacity Factor (in MRs)	Annual Revenue at Alternative Capacity Factors Adjusted for Penalty/Bonus (in MRs)	Average Price Paid for Received KwH
45%	6,162	5,091	1.076
50%	6,162	5.448	1.037
55%	6,162	5,805	1.004
60%	6,162	6,162	0.977
65%	6,162	6,309	0.923
70%	6,162	6,455	0.877
75%	6,162	6,602	0.837
80%	6,162	6,749	0.802
85%	6,162	6,895	0.772
90%	6,162	7,042	0.744

Assumptions:

[1] Plant capacity of 1200 MW
[2] Energy charge within tariff is .379 Rs/KwH
[3] Penalty calculated at .3 Rs/KwH below 60% capacity factor
[4] Bonus calculated at .1 Rs/KwH above 60% capacity factor

Return on E. ,ity (ROE) Impact of Alternative Average Tariff Assumptions

Alternative Tariffs			
Average Yrs 1-12	Average Yrs 13-23	Associated ROE	Associated Cash Flow
1.020	0.807	22.0%	2,105
0.977	0.781	18.3%	1,781
0.950	0.764	15.9%	1,577
0.900	0.733	11.1%	1,204
0.880	0.720	9.0%	1,055
0.850	0.702	5.6%	828
0.816	0.681	0.0%	498

Notes/Assumptions:

[1] Assumes no change in HRPG cost configuration as contained in the financial model
[2] The Average Tariff for Years 13-23 is derived by using the same step-function formula as contained in the HRPG financial model
[3] Cash flow is expressed in US$ millions for life of project

Date	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Foreign Exchange Requirments (LOP):														
Pre-Operating Costs														
1. Construction Contract	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2. Owners Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. O&M Start-Up Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Rolled-Up Interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Fees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Pre-Operating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating Costs														
1. Fixed Operating Costs	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7
2. Variable Operating Costs	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
3. Debt Service	103.0	94.8	89.3	89.3	88.8	47.5	47.5	47.5	47.5	47.5	47.5	47.0	(0.0)	(0.0)
4. Cash Divs Distr. (MUS$)	47.6	50.1	50.1	51.1	55.6	53.2	37.1	26.5	28.3	31.6	35.0	38.6	41.8	44.5
Total Operating	169.0	163.3	157.8	158.9	162.8	119.1	103.1	92.4	94.3	97.5	101.0	104.0	60.3	63.0
Total FX requirements	169.0	163.3	157.8	158.9	162.8	119.1	103.1	92.4	94.3	97.5	101.0	104.0	60.3	63.0

Exhibit E

Date	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Year	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
Foreign Exchange Requirments (LOP):														
Pre-Operating Costs														
1. Construction Contract	0.0	0.0	0.0	101.0	133.0	219.0	99.0	38.0	0.0	0.0	0.0	0.0	0.0	0.0
2. Owners Costs	1.2	5.1	11.2	5.1	0.9	0.9	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0
3. O&M Start-Up Costs	0.0	0.0	0.0	0.0	0.1	5.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Rolled-Up Interest	0.0	0.0	0.0	9.2	20.4	42.5	30.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Fees	0.0	0.0	0.0	17.0	6.3	6.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Pre-Operating	1.2	5.1	11.2	132.4	160.8	274.1	134.3	38.2	0.0	0.0	0.0	0.0	0.0	0.0
Operating Costs														
1. Fixed Operating Costs	0.0	0.0	0.0	0.0	0.0	0.0	13.8	16.7	16.7	16.7	16.7	16.7	16.7	16.7
2. Variable Operating Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8
3. Debt Service	0.0	0.0	0.0	18.7	23.2	44.8	66.2	94.7	97.5	97.5	97.5	103.0	103.0	103.0
4. Cash Divs Distr. (MUS$)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	29.1	30.3	35.4	36.9	40.5	44.0
Total Operating	0.0	0.0	0.0	18.7	23.2	44.8	80.7	137.2	145.1	146.3	149.4	158.3	162.0	165.5
Total FX requirements	1.2	5.1	11.2	151.1	184.0	319.0	215.0	175.4	145.1	146.3	149.4	158.3	162.0	165.5

Exhibit E

Date	2014	2015	2016	2017		TOTAL
Year	22	23	24	25		

Foreign Exchange Requirments (LOP):

Pre-Operating Costs

1. Construction Contract	0.0	0.0	0.0	0.0		590.0
2. Owners Costs	0.0	0.0	0.0	0.0		25.6
3. O&M Start-Up Costs	0.0	0.0	0.0	0.0		6.7
4. Rolled-Up Interest	0.0	0.0	0.0	0.0		102.4
5. Fees	0.0	0.0	0.0	0.0		32.7
Total Pre-Operating	0.0	0.0	0.0	0.0	0.0	757.4

Operating Costs

1. Fixed Operating Costs	16.7	16.7	0.0	0.0		397.2
2. Variable Operating Costs	1.8	1.8	0.0	0.0		41.6
3. Debt Service	(0.0)	(0.0)	(0.0)	(0.0)		1,646.5
4. Cash Divs Distr. (MUS$)	47.1	49.1	42.0	0.0		967.4
Total Operating	65.6	67.6	42.0	(0.0)	0.0	3,052.7
Total FX requirements	65.6	67.6	42.0	(0.0)	0.0	3,810.1

Exhibit E