

470 Megawatt Power Plant Karachi, Pakistan



Information Memorandum

Cavalier Energy Corporation has been awarded a 25 year contract by the Government of Pakistan to Build, Own and Operate a 470 Megawatt Independent Power Plant at Karachi, Pakistan. The plant will be built on a fast track basis to help solve Pakistan's major electrical shortages.

The project is backed by Sovereign Guarantees with guaranteed minimum 18%+ Internal Rate of Returns at 60% off-take and substantial upside at higher off-take rate.

The project has been registered for Full U.S. Government Political Risk Insurance and US EXIM Bank Finance.

The project sponsors are exploring alternate methods of financing and have created this Memorandum for discussion purposes.

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CONTRACTURAL

Government of Pakistan Letter to Proceed (Award)
Sovereign Guarantee
Letter of Support
Implementation Agreement
Power Purchase Agreement

FINANCE AND POLITICAL RISK

US EXIM Bank - Finance
US Overseas Private Investment Corporation (OPIC) - Political Risk

TECHNICAL

Project Drawings
Gas Turbine Performance Data
Equipment Package A

PROJECT TIMELINE

Project Schedule
Scope of Services

ENGINEERING, PROCUREMENT AND CONSTRUCTION CONTRACTOR

CANDIDATES

OPERATION AND MAINTENANCE CONTRACTOR CANDIDATES

China National Chemical Engineering Corporation Group (CNCEC)
China National Electrical Engineering Corporation (CNEEC)
Korea Midland Power (KOMIPO)
Wood Group

PAKISTAN ELECTRICAL DEMAND AND ORGANIZATION

Demand Projections
Pakistan Government Power Generation Organizations



INFORMATION MEMORANDUM

470 Megawatt Independent Power Plant

Karachi, Pakistan

Overview

The Government of Pakistan recently held International Competitive Bidding for setting up Independent Power Plants with a cumulative capacity of 1000 MW. Cavalier Energy bid for a 500 MW (470 MW net) capacity power plant based on LPG at Port Qasim, Pakistan. The Bidding was held on 15th July 2008 and bids were received for a cumulative total of 3000 MW from nine competing bidders.

After an elaborate evaluation process and after getting necessary approval from the Cabinet and the Economic Coordination Committee, on 12th September 2008, the Government of Pakistan awarded permission to three bidders with Cavalier Energy winning 470 MW out of the proposed 1000 MW at an approved tariff of US \$ 0.1449 per KWh and at a project cost of around US \$ 700 Million.

Under the Power Policy 2002, The Government of Pakistan (GOP) is offering a sovereign guaranteed tariff, for the sale of electricity by the IPPs (Independent Power Producer to power purchaser PEPCO (Pakistan Electric Power Company) against a 25 year Power Purchase Agreement on a Build, Own and Operate (BOO) basis.

This tariff covers each and every component of capital expenditure and operating cost of the Project. In the event of successful completion of the Project within the budgeted cost for such completion, a Minimum internal rate of return (IRR) on equity is guaranteed by the GOP. The minimum IRR allowed by the GOP is 15% on total equity injected into the Project in US Dollar terms. The GOP Guarantee will be backed by the US Government's Overseas Private Investment Corporation (OPIC coverage) being arranged by Cavalier Energy. OPIC's coverage allows for private equity investors' sovereign risk exposure to Pakistan to be covered by the US Government.

Project sponsor Cavalier Energy (hereafter referred to as CE) will be taking project insurance from the US Government backed OPIC (Overseas Private Investment Corporation) to cover currency inconvertibility, expropriation and political violence. Any civil strife incidents affecting Cavalier's plant will be covered by OPIC's guarantee. The purchase of OPIC coverage will see Cavalier's power plant having US sovereign ratings for insured risks.

State of the Art Thermal Power Plant. Project sponsor have selected the latest technology for electricity generation for its Power Plant. CE's power plant is comprehensively equipped with production facilities including LPG storage & handling facilities on Project site, and a dedicated port terminal that facilitates the transportation of raw materials to power plant.

The Power Plant power off take is guaranteed by PEPCO (Pakistan Electric Power Company), the Government Body charged with off-take purchases from approved power producers. The GOP (Government of Pakistan) Guarantee Program covers 60% (on take-or-pay basis) of all power off-take purchases from Cavalier's power plant capacity utilization. In other words the 60% of the total capacity of the Project will either be dispatched or to be paid by the power purchaser. It is pertinent to mention here that the proposed tariff is calculated on the basis of 60% dispatch by the power purchaser, so the capacity payments based on 60% dispatch cover all the cash outflows to lenders, shareholders, O&M contractor, Insurance, Working Capital etc.

International names assuming responsibility for management of project components. Strong management emphasis on outsourcing to quality contractors managing the entire process from project manager to appointment of EPC (Engineering, Procurement And Construction) Company to appointment of O&M (Operations and Maintenance) contractors managing the Karachi plant for the 25 year concession period granted to Cavalier.

Appointment of Experienced American project management team to oversee the appointment of EPC and O & M Companies. An experienced American project management team, Texas based Global Edison is



assisting Cavalier's sponsor in project management for the deal readiness stage. Scope of OPIC's comprehensive coverage for private equity exposure to Pakistan's sovereign risk, LPG supplies for the 500 MW power plants, short-list of EPC and O&M contractors will be pre-conditions to investor's deal closure.

Outsourcing of Business Risks from Implementation to Product Delivery. The outsourcing of all business risks will see all business process components outsourced to international players in the power industry. The outsourcing will start from procurement to power plant set-up to billings, payment collections and plant maintenance for 25 years to international names for EPCC and O&M companies. These specialist main contractors will provide financial guarantees for their roles and attendant business risks will be transferred to these contractors for the business delivery process component they are responsible for. The project's financial risks for the duration (and beyond) of their commercial role will be carried on these international contractors' books.

Risk mitigation of the project. As an incentive for investors, the Government of Pakistan (GOP) is offering a Minimum IRR on total equity through power purchase agreement. Cavalier will reinforce GOP Guarantee with the US Government's Overseas Private Investment Corporation (OPIC coverage) to ensure shareholder returns.

The relevant risks associated with smooth running of the Project are being covered by GOP, for example, change in prime bank interest rates financing the debt of the Project, US CPI inflation, US\$/PKR parity, fuel price changes etc. will pass through to power purchaser.

The World Bank's IFC has financed previous energy projects in Pakistan on GOP Guarantee on a standalone basis.



Prospects

Off-take Purchase by Government of Pakistan Guarantee Program for 60% Purchase of All Power Off – Take Production Capacity By Power Producers Under Its Energy Sector Incentives Program.

Cavalier's levelized tariff of US\$0.1449 per kWh along with all the indexations and escalations allowed by GOP will ensure the achievement of minimum IRR of the Project in US\$ term basis. This minimum IRR will provide sufficient cash flow to pay preferred redeemable shareholders and/or convertible bond holders of the equity component of the Project.

LPG Gas Supply Agreement for Cavalier's Power Plant

Long term 10 year import agreement for LPG will be in place with 2 gas suppliers in the Middle East and Russia to Port Qasim, Karachi. This will be a pre-condition to investor's deal closure. Price review will be scheduled for every 10 years,¹ with a price review in the 20th year.

Presence of Ready Markets for CE's Power off-take in Karachi in The Near And Medium Term

Per capita consumption of power is set to rise from the industrial sector and consumer sectors in tandem with growing spending power and rapid improvement in living standards as urbanization gains pace across Pakistan.

Karachi is experiencing a power shortage situation in the near to medium term due to an outdated power supply infrastructure.

As important end-users, industry will continue to generate strong demand for power in the Karachi region.

Growing Environmental Awareness

LPG's properties as a clean-burning and energy-efficient fuel are expected to attract growing demand amidst increasing efforts to improve the environment. Cavalier's LPG driven thermal plant is the first mover for LPG plants in Pakistan. Already, LPG is being used as an alternative fuel source for motor vehicles in the world's leading economies. The Project is therefore a strong contender for CER's from UNFCCC.

Karachi Power Shortage/ Project Background and Economics

Cavalier's Karachi thermal plant is designed to address the power shortage situation in the country. The frequent disruptions to power supply in the country including city of Karachi has forced the GOP to invite international bids for installation of new projects in the country to overcome this problem. Cavalier's Project is one of those qualified projects by GOP. PEPCO currently dispatch the shortfall in Karachi supplies through Punjab Province, which results into line losses and heavy maintenance costs to it. PEPCO currently plans to cover the Karachi system shortfall through Cavalier's project.

As at end August, 2008, the countrywide power deficit/shortage in Pakistan is estimated to be 4,500 MW. Cavalier's approved tariff of US14.5 cents/kWh was approved as a result of the urgent need for power supply in Karachi and Pakistan.



CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

All statements contained in this Information Memorandum, statements made by our Directors, Executive Officers and oral statements that may be made by us our Directors, Executive Officers or employees acting on our behalf or our Company, that is not statement of historical fact, constitutes “forward-looking statements”. Some of these statements can be identified by forward-looking terms such as “expect”, “believe”, “plan”, “intend”, “estimate”, “anticipate”, “may”, “will”, “would” and “could” or similar words or phrases. However, these words are not the exclusive means of identifying forward-looking statements.

All statements regarding our expected financial position, business strategy, plans and prospects, and the future prospects of our industry are forward-looking statements. These forward-looking statements and other matters discussed in this Information Memorandum regarding matters that are not historical facts are only predictions. These forward looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. These risk factors and uncertainties are discussed in more detail in this Information Memorandum, in particular, but not limited to discussions in the “Risk Mitigation Measures” section of this Information Memorandum.

Given the risks and uncertainties that may cause our actual future results, performance or achievements to be materially different from that expected, expressed or implied by the forward-looking statements in this Information Memorandum, we advise you not to place undue reliance on these statements.

Neither our Company, warrants to you that our actual future results, performance or achievements will be as discussed in those statements.

Our actual future results may differ materially from those anticipated in these forward-looking statements as a result of the risks faced by us.

SELLING RESTRICTIONS

This Information Memorandum does not constitute an offer, solicitation or invitation to subscribe for and/or purchase our Shares in any jurisdiction in which such offer, solicitation or invitation is unlawful or is not authorized or to any person to whom it is unlawful to make such offer, solicitation or invitation.

Persons to whom a copy of this Information Memorandum has been issued shall not circulate to any other person, reproduce or otherwise distribute this Information Memorandum or any information herein for any purpose whatsoever nor permit or cause the same to occur.



1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This Information Memorandum ("IM") has been prepared for soliciting the interest of relevant potential sophisticated investors ("Investors") as defined by the relevant Securities and Future legislation in different jurisdictions for private equity participation via redeemable preference shares with guaranteed dividend yield of 15% or via mezzanine investment in Cavalier Energy Group (hereafter referred to as CE) for setting up an approximate 500 MW LPG based Thermal Power Project in Karachi, Pakistan. The total project cost is estimated to be US\$ 615 million and is to be funded in a Debt/Equity ratio of 75:25.

1.2 THE KARACHI THERMAL POWER PLANT PROJECT

CE's Karachi thermal power project involves the setting up an approximate 500 MW power plant (the "Project") on BOO (Build Operate Own) basis for a period of 25 years. The Project will be a thermal Independent Power Plant ("IPP") using Liquefied Petroleum Gas ("LPG") as fuel. CE is the Project Sponsor and will hold the concessionary rights of the Karachi thermal power plant project for 25 years.

CE has appointed Global Edison to serve as project manager for appointment of the EPC (Engineering, Procurement and Construction) Contractor and the O&M (Operation & Maintenance) Contractor for the Project. The electricity generated by the Project will be sold to PEPCO under the Power Purchase Agreement ("PPA"), which in turn will distribute the output generated by CE's thermal power plant.

The project will obtain a No Objection Certificate from the Environmental Protection Agency, and the plant specifications of CE's Karachi power plant are designed with World Bank emissions guidelines in mind. As such, the project is not expected to be to the material detriment of the environment.

1.3. THE SPONSORS

The Primary Sponsors for the project are Cavalier Energy & Defense Systems Group (www.cedsg.com), a company incorporated and registered under the laws of Pakistan and Global Edison Corporation (www.GlobalEdison.com) registered under the laws of Texas and the USA. The principal activity of the Cavalier Energy & Defence Systems Group is the supply of defense related goods to the Pakistan Government. The principal activity of Global Edison is the development, finance and operation of power plants.

1.3.1 PROJECT MANAGER

Global Edison (GE), (www.globaledison.com) an American project management company for energy projects provides a full range of business development and project management services including project development and management as well as financial and risk insurance advisory services. GE is acting in an advisory role and as project manager to CE for the Karachi thermal plant.

1.3.2 TECHNICAL PARTNER

APR Energy, LLC, USA, (formally Alstom Power Rentals) (<http://www.aprenergy.com>) is the technical partner in this project. Apart from their numerous other projects the World over, Alstom Power rentals have already set up a 136 MW Pakistan power plant in 2006. They would be providing valuable technical expertise for successful implementation of this project.



1.3.3 EPC AND O&M CONTRACTOR

EPC Contractor

The selected EPC contractor will be a world class leading provider of solutions and supplier of power plants for the decentralized power generation market. Being the EPC contractor (with a likelihood of becoming the O&M contractor) for the Project, the selected EPCC will have access to its international technical resources and parts distribution networks. The operator guarantees availability, plant output and heat rate for the contracted period, thus minimizing the technical risk of the project.

The EPC contractor will carry Cavalier's thermal project risks on their books for 2 years after plant commissioning.

Note: The Project Sponsors have been actively negotiating with major experienced, international energy companies, to participate in the equity investment of the project, **and/or** as EPC main contractor to take responsibility for the future administration, operation and maintenance of the completed facility. The selected Operator will enjoy the rate of return of its investment from the income of the completed Facility as well as an annual Operator's bonus expressed as a percentage of Net Operating Income.

O&M Contractor

The selected Operations and Maintenance Contractor will be a world class leading operator of power plants in both developed and emerging markets. The O&M contractor will be responsible for the plant's continuing operating efficiencies, customer billing, receivable collections and any dispute resolutions with PEPCO. The O&M Contractor will carry Cavalier's thermal plant's operating risks on their books for the 25 year concession period granted to Cavalier.

1.4 PROJECT COST ESTIMATE

Preliminary Project Cost Estimate-Table I below outlines the estimated budget for the Project

Table I Preliminary Project Cost Estimate

Category	US\$ Millions
- EPCC Construction Cost and BOP (Balance of Plant)	480.0
- Debt Service Reserve (3 months)	18.0
- Admin & Development Costs, Contingency Costs	12.0
- Development Fee (Engineering and Design)	5.0
- Finance Fees and Closing Costs	14.0
Total less interest during construction	529.0
- Interest During Construction	38.0
- Additional Project Contingency	48.0
-Working Capital For 2 Months LPG Imports	85.0
Total Project Cost*	700.0

*Detailed breakdown of costs will be provided by Cavalier.



1.5 FINANCING PLAN AND FINANCIAL RISK OUTSOURCING

The planned financing of the Project is by long-term debt (75%) and equity (25%). CE and GEC, being the "Main Sponsors", currently holds 100%, of the equity of the project company holding the concession rights for the operation of the Karachi Power plant.

Table below illustrates the current financial plan for the Project:

Table: PRELIMINARY FINANCING PLAN		
	US\$ Million	% of Total
EQUITY:		
Assumed Investment by Project Sponsor	66.0	10.0
New Investors		
– Private Placement Convertible Loan/ Preferential Shares	\$97.0	15.0
Total Equity	\$163.0	25.0%
*DEBT:		
Private Placement Unrated Bond Issue –	--	--
Loans by Commercial Banks	--	--
Loans by Development Banks	--	--
Export Credit Financing by Vendors	--	--
Sub-total Debt	<u>\$487.0</u>	<u>75.0%</u>
TOTAL	\$650.0	100.0%

Following successful completion of investor due diligence, and upon financial closing on long term debt, debt and equity funds will be drawn pro-rata to fund the cost of construction, in accordance with the draw-down schedule to be developed by the Sponsors, in conjunction with the lenders and investors.

*** The debt funding mix is to be finalized after location of private equity.**

1.5.1 THE INVITATION TO SOPHISTICATED INVESTORS (AS DEFINED BY GOVERNING SECURITIES LAW IN THE RELEVANT JURISDICTIONS)

The project principal/sponsors contemplates that a 25% equity investment (USD\$163 million) will enable it to secure a long-term debt facility of US\$487.0 million for a 10 years term.

A portion of the committed equity, approximately US\$66 million, will have been paid in prior to financial closing, to complete development, and to fund the due diligence examination by investors/lenders to secure the remaining elements needed for a financing commitment, as enumerated below. The remaining equity, and all long term debt, will be invested pro-rata during construction, in accordance with a Drawdown Schedule to be developed in conjunction with lenders and investors.

The Project Sponsors intend to invite selected experienced international energy companies to participate in the equity investment of the Project, **and/or** to act as Operator during the Commercial Operation period. The target level of investment anticipated from this entity may range from \$10 million up. A portion of this amount, approximately US\$66 million by the project principal/sponsor, will be invested prior to financial closing to fund the completion of the development of the Project and the cost of due diligence by the providers of the long term debt.

The remainder of required equity, of up to US\$97 million, will be sought from institutional investors on



the basis of a private placement process, to be invested through a Trustee or Trustee Bank that will represent this investor group and take responsibility for managing investor interests during the construction and operational periods.

The Investors may choose to provide a portion of Project required equity in the form of:

- 1) A convertible loan with a maturity premium or
- 2) Redeemable preference shares with a guaranteed dividend yield of 15% per annum and a redemption premium if necessary and appropriate. Such loan or preference equity would be considered by long term lenders as equity, for purposes of determining total equity investment.

Proposed terms for equity investor in the investment contract: The structuring of terms of conversion will be a 10% premium payable to 1) convertible loan holders or 2) preference shareholders with a guaranteed dividend yield.

The maturity premium payable to the above proposed private equity instruments in lieu of conversion at maturity for: 1) convertible bonds and, as 2) a redemption premium for buyback of preference shares at the maturity of the investment period.

The proposed conversion/buyback terms and tenor of the investment period will be contained in the investment contract between the project principal/sponsors and private equity investors.

1.5.2 Completion of Project Development: the following actions are required to be completed successfully in order to achieve completion of Project development:

1.5.2.1 Complete Preliminary Engineering: this step involves selecting an outside contractor to review the preliminary design work product of the firm, who prepared the initial prefeasibility investigations, and performed additional surveying and sub-surface investigations – in preparation for selection of the EPC Contractor.

1.5.2.2 Environmental Impact Study: utilizing an outside contractor to verify compliance with environmental regulations in use by respected international commercial lenders including the World Bank.

Outsourcing of Project's Financial Risk:

1.5.3 Select EPC Contractor: prequalification and selection of potential EPC contractors will be undertaken in parallel with the Loan Application process and the conduct of investor/bank due diligence. Following review of Preliminary Engineering, prospective bidders will be supplied with the Project's basic design drawings and specifications, and will be invited to review all technical specifications and negotiate a single, lump-sum price for the Turnkey construction of the Facility. Each prequalified EPC bidder will be evaluated based upon experience, financial strength, price, track record, bonding capacity, and availability to construct and deliver the Project on a timely and cost effective basis. Final selection will be made after approval of investors, lenders and other stakeholders of the Project.

The EPCC will carry the project risk on their books for 2 years after project completion. The EPCC will guarantee the net capacity of the plant as per final design and power purchase agreement.

1.5.4 Select O&M Contractor: prequalification and selection of potential O&M contractors of international repute. Final selection will be made for a long term contract to operate and maintain the Karachi thermal plant. The O&M will carry the financial risks on their books for the duration of the contract.



1.5.5 Bank Selection and Due Diligence: Project Sponsor Cavalier intends to invite a selected list of qualified international lenders to bid on the provision of a long term loan to finance the Project, using a Information Memorandum as a detailed description of the Project. Following selection of the preferred Lender, and using independent contractors and staff, at Sponsor's expense, it is expected that the selected Bank or Banks will review the Project engineering, market assessment, economic projects and environmental compliance to evaluate the Project for loan approval. At completion of Bank due diligence, the Sponsors and selected Lenders will negotiate a detailed Loan Agreement defining the final terms and conditions of the Loan.

The project sponsors have an action plan and in principle agreement with the lenders (e.g. The USA's EXIM Bank) in place.

1.5.6 Sponsors to negotiate all Project contracts:

Agreement for Long Term Debt: covering long-term senior and subordinated debt financing (if applicable), for construction of the Project.

- **EPC Agreement:** a detailed agreement between Cavalier and the EPC Company selected to provide engineering, procurement, construction and commissioning (EPCC) services for the Turn-Key construction of the facility.
- **O&M Agreement:** a detailed agreement between Cavalier and the O&M Company selected to provide operations and maintenance (O&M) services for the Turn-Key management of the facility
- **Interconnection Agreement is covered in:** the agreement between Cavalier and PEPCO for the interconnection of the Project to the national grid, and registration of the Project as a "market participant" in the Karachi market for electricity.
- **Power Purchase Agreement:** has been negotiated between Cavalier and the Power Purchaser i.e. PEPCO for sale and purchase of electricity.
- **OPIC sovereign insurance coverage**

* Note: Full details of OPIC coverage and Pakistan Government Guarantee with Cavalier will be made available during the due diligence stage.

1.5.7 Risk Mitigation Measures

The project sponsors have taken a comprehensive insurance coverage for business model for their power production facilities.

The risk mitigation measures include comprehensive sovereign risk insurance to cover any unforeseen changes in the Pakistani Government guarantee program for the power generation sector. The Sovereign risk insurance program is provided by the US Government's OPIC, with the attendant sovereign risk of the insurer applying to the project. The sponsor's risk mitigation measures for equity holders in the project include:

- Securing of Sovereign Risk Insurance and scope of political insurance coverage to cover Government guarantees for project term of 25 years. OPIC coverage includes coverage for currency inconvertibility, expropriation, political violence and civil strife scenarios.
- Appointment of EPC Contractor – Project Risk is kept on EPC Contractor's books until 2 Years after Project Commissioning (The EPC contractor is from an OECD country)
- Power Purchase Agreement – Sovereign Agreement with PEPCO for purchase of project off-take at an agreed upon tariff.



- Implementation Agreement: Sovereign Agreement – GOP Cover Pays on a Cost plus Basis to allow for price increases in input materials.
- Political Insurance Coverage – OPIC (Overseas Private Investment Corporation).
- O&M contractors- Plant maintenance contractors will be solely responsible for plant failure, billings and payment recoveries to and from power purchaser, disputes with the power purchaser for the 25 years of the plant's operations.
- Gas Supply agreements with Russia and Qatar or any other Gulf State suppliers for 25 years in 10 year contract review phases will be in place before external funds injection by investors. The proposed power plant's access to gas supply will be ascertained in full detail during the investor's due diligence stage.
- The inflation, change in fuel prices, banks prime rate and exchange rate variation risks are covered by GOP through schedule 6 of power purchase agreement, whereby all such additional charges are assumed as pass through to the power purchaser. (Full details of Cavalier's tariff model and risk mitigation measures will be disclosed after signing of NDA by the investor.)

1.6 PROJECT SUMMARY

Sponsors / Shareholders	Cavalier Energy / Waseem Pasha Tajammal Global Edison Corporation / Rod A. Johnson
Project Manager/Advisor	Global Edison (www.globaledison.com)
Technical Partner	APR Energy (www.aprenergy.com)
Off-take Purchaser	Pakistan Electric Power Company (PEPCO)
Fuel Supplier	Reputable LPG Supplier From Middle-East/Russia identified by Sponsor
EPC Contractor	To be appointed with an advisory role from Global Edison/APR Energy
O&M Contractor	To be appointed with an advisory role from Global Edison/ APR Energy
Financiers	A consortium of financial institutions and investors has been located for the debt component by Cavalier and project manager.
Project Cost	US\$ 615 million (approx.)
Capital Structure	75% debt 25% equity
Project Size	470 MW Net (Combined Cycle)
Project Site	Port Qasim, Karachi, Pakistan
Approved Tariff	US 14.49 Cents/KWh (as per tariff approved by the GOP)
Technology Equipment	Simple Cycle Gas Turbine Generators



2.0 INVESTMENT AND RISK CONSIDERATIONS

2.1 INVESTMENT CONSIDERATIONS

2.1.1 GROWING DEMAND OF ELECTRICITY

Electricity demand in the country continues to grow due to chronic power shortage, on the back of acceleration in industrial activity and growing population. The estimates indicate supply demand mismatch and the electricity demand is set to double in the next ten years. This means that by 2015 some 15,000 MW new capacity needs to be installed. This would mean that more than 1,500 MW should be constructed each year just to cover the growth. Growing consumer base of electricity, low per capita electricity consumption, shortage in the medium-term, and with insufficient power production it is expected that the Water and Power Development Authority ("WAPDA")'s reliance on thermal power generation and therefore on power supplied by (Independent Power Producers ("IPP"))s will remain significant.

2.1.2 CONSISTENT CASH FLOWS WITH LONG TERM OFF TAKE AGREEMENT

The project involves consistent cash flows under the Power Purchase Agreement ("PPA"), covering debt servicing and other cash outflows. Tariff structure is classified into two components; (a) cash outflows linked with capacity utilization of the plant such as fuel price, variable O&M, etc (referred as "Energy Purchase Price") and (b) cash outflows independent of capacity utilization of the plant such as debt servicing, return on equity, fixed O&M costs etc (referred as "Capacity Purchase Price"). Hence, debt servicing, return on equity, O&M cost, working capital cost, Insurance cost and other fixed costs are covered and are assured regardless of capacity utilization of the plant.

2.1.3 LOW PROJECT CONSTRUCTION RISK

The plant, based on state of the art Combined Cycle Gas Turbine Generator technology, will be reliable and efficient throughout the operating period. Comfort is derived from an experienced project manager and professional advisors advising the project sponsor from project inception to project completion. Cavalier has achieved a good tariff through professional advice.

2.2 RISKS & MITIGANTS

2.2.1 COMPLETION RISK

The terms of standard PPA requires the project to be designed, implemented, constructed, commissioned and commercially operational under an agreed timeline (RCOD- Required Commercial Operations Date). Any deviations from the RCOD may lead to CE paying liquidated damages and a reduction in the investors' return on capital. The success of the project is, therefore, entirely dependent on the EPC contractors' ability to perform as per the specifications agreed in the contract.

Risk Mitigation Measure

Date-certain price-fixed contracts will be executed with a world class international EPC Contractor. Details of short list contractors are attached in the Appendix. These contractors have constructed numerous similar projects in similar conditions and one contractor is in fact already mobilized at two adjacent sites building refineries and chemical plants including their own internal gas turbine power plants. All risks associated with design, implementation, construction, commissioning and testing shall be borne by the experienced EPC contractor. Performance guarantees, according to international standards, furnished, as part of the project contracts will also be available. The selected EPC contractor will be of international repute and will be financially strong.



Financiers derive their comfort from the use of international big names from the fact that the EPC and O&M contracts will be awarded to international big names. These contracts will be reviewed by experienced Technical and Legal Consultants.

The selected EPC contractor will carry the project's risk on their books for 2 years after project's completion and commissioning.

2.2.2 POLITICAL RISK

This includes risks like:

- a) Coverage of non-contract related force majeure events
- b) Changes in law and
- c) Expropriation, etc

Risk Mitigation Measure

These risks have been adequately covered in the Implementation Agreement which was part of the bid package.

Given the current power demand supply scenario in Pakistan, the Government will strive to ensure a stable environment to encourage further private sector investment and avoid any potential political and economic deterrents.

The project sponsor has already registered the project for Political Risk Insurance and the project company will be purchasing OPIC sovereign risk coverage to supplement GOP guarantee. OPIC coverage includes coverage for currency inconvertibility, expropriation, political violence and civil strife scenarios. The projects equity and cash flows from the Power Purchase Agreement will be 100% insured so both equity and profits are insured.

2.2.3 OPERATIONS RISK

Capacity payments are a function of a power plant's dependable capacity. Hence, dependable capacity is crucial to the sustenance of the power plant as the GOP reserves the right to reduce the capacity payments if the power component of CE drops substantially below the dependable capacity.

Furthermore, a decline in power plant's efficiency will impact energy payments since, under the PPA; CE cannot pass through a hike in fuel expenses due to plant inefficiency to NTDC, hence constraining CE's cash flows.

Risk Mitigation Measure

The performance risk of the plant shall be mitigated by the appointment of the O&M Contractor. The O&M arrangements will be finalized only after the other milestones related to signing of PPA, IA etc have been achieved. CE will enter into an O&M agreement with an experienced O&M of international repute, to carry out the O&M activities of the power plant.

The O&M contract will cover minimum performance standards of the plant, and will specify liquidated damages for operation related losses.

2.2.4 OFF-TAKERS' PERFORMANCE RISK

PEPCO will be the sole off-taker of power, which exposes CE to concentration risk. If PEPCO fails to meet its obligations under the PPA, it might result in insufficient cash flows for CE.

Risk Mitigation Measure

WAPDA is an electricity generating and transmission state enterprise and is of strategic importance, given the essential nature of the electricity sector to national security and economic development.



PEPCO is WAPDA's transmission and distribution arm for all Pakistan except for Karachi. Karachi's power supplies are from KESC. WAPDA sells directly to KESC.

PEPCO's credit risk is mitigated by the fact that GOP provides budgetary support to WAPDA to help the utility meet its financial obligations. Specifically, GOP will provide a guarantee for the payment obligations of PEPCO to CE, under the Implementation Agreement.

2.2.5 INSUFFICIENT FUEL SUPPLY RISK

The risk scenario of fuel supplies are interrupted due to insufficient fuel reserves or a technical failure affecting the fuel contractor jetty, delivery system, storage or Single Point Mooring.

Risk Mitigation Measures

CE will enter into a 10 year Fuel Supply Agreement with the owners and operators of the existing LPG jetty and major LPG suppliers in the Middle East or Russia, which shall ensure fuel will be supplied on a best efforts basis depending upon the availability of the resource. LPG is available both locally and internationally, and supply risk is adequately mitigated. Additionally, the fuel supplier will provide financial guarantees for any penalties /damages due to non supply of fuel.

It is expected that in case of national shortage of fuel, GOP will facilitate the availability of fuel, under the Implementation Agreement.

LPG fuel can be supplied in ISO containers on a temporary basis in the remote event of technical issues with jetty.

A 30 day supply of LPG fuel will be maintained on the power plant site as the primary risk mitigation. Should market factors indicate a need for increased in reserve fuel supply then an LPG tanker will be leased and moored at the jetty until market conditions reverse. Any additional costs are passed through to the Government of Pakistan.

Force Majeure events related to fuel supply will be covered by OPIC political risk insurance.

2.2.6 VOLATILITY IN FUEL PRICE RISK

The risk that fuel price volatility materially affects the project's economics.

Risk Mitigation Measure

As per the tariff structure approved by the GOP, fuel cost is a pass through item and therefore the any price variation will be passed through to the power purchaser. Hence CE's risk exposure to LPG price volatility is mitigated.

2.2.7 INTEREST RATE RISK

The risk of interest rate volatilities may materially affect the project's economics.

Risk Mitigation Measure

The calculation of interest portion of the capacity charges payable by GOP to CE accounts for a floating base rate. Hence any fluctuations in SIBOR/HIBOR/KIBOR are passed through to the power purchaser and do not affect the company's financials adversely. Similarly, changes in interest rates during construction period (resulting in a variation of the construction costs) are also pass-through costs, being calculated as part of approved project cost under the approved tariff.



2.2.8 INCREASE IN PROJECT COST

Project Cost may rise due to increase in macro economic variables like interest rate, inflation rate, and exchange rate. Although, all the above variables are pass-through to the Power Purchaser, the true-up of these costs takes place at the end of the construction period. This gives rise to a risk of shortfall in meeting the funding requirements of the Project.

Risk Mitigation Measure

The tariff approved by the GOP, will explicitly provide a comprehensive adjustment (true-up) mechanism, whereby pass-through project costs will be provided for in terms of debt-servicing and ROE components of the tariff. This procedure of true-up will be included in the Power Purchase Agreement signed between the GOP and CE. As such, these cost overruns will be fully provided for in terms of both debt-service coverage and equity returns. Therefore, the same will be funded through both debt and equity.

2.2.9 RISKS RELATING TO PAKISTAN

Dependency on the Pakistan market

In the initial financial years of our plant's operations, all of our revenue will be derived from the Pakistan market. Since all of our power output will be sold to PEPCO in the Pakistan market, the general economic, political, legal and social conditions prevailing in Pakistan will directly and indirectly affect our financial performance and operations. The Pakistan government has undergone several economic reforms that had resulted in healthy economic growth for Pakistan for the last five years. However, many of the reforms, which are unprecedented or experimental, are expected to be refined or modified from time to time.

Furthermore, the recent regime change in August 2008 has added to the uncertainty. We have addressed this uncertainty in political directions for Pakistan through risk mitigation measures. (Please see risk mitigation measure).

The refinement and readjustment process may consequently have a material impact on our operations and financial performance. Our results and financial conditions may be adversely affected by any unfavorable changes in Pakistan's economic, political and social conditions.

Our business and operations in Pakistan are subject to the laws and regulations promulgated by Pakistan's government. In particular, our business operates in a controlled industry involves the general public, hence special approvals and licenses are required for our business operations.

The Pakistan legal system is based on Pakistan's Constitution and is made up of written laws, regulations, circulars and directives. The Pakistani government is still in the process of developing its legal system, so as to meet the needs of investors and to encourage foreign investment. As the Pakistani economy is generally developing at a faster pace than its legal system, a strong degree of uncertainty exists in the application of the existing laws and regulations to certain events or circumstances. Some of the laws and regulations, and the interpretation, implementation and enforcement thereof, are still at the experimental stage and are therefore subject to policy changes. Furthermore, as these laws and regulations are relatively new, and due to the limited volume of published cases and judicial interpretation and their lack of precedential force, the interpretation and enforcement of these laws and regulations involve uncertainties and different degrees of inconsistencies.

Due to the lack of certainty in Pakistani laws and regulations, new laws and regulations or changes to the existing laws and regulations might be introduced and affect the special laws and regulations that we are currently adhering to. If we do not adhere to and comply with such changes in laws and regulations, the relevant authorities may terminate, withdraw or suspend our licenses or activities, or impose penalties on us. In addition, as we may be required to make the necessary changes to our operations to comply with such new laws and regulations, additional costs may be incurred. As a result, this may affect our operations and financial performance.



Risk Mitigation Measure

Purchase of OPIC sovereign risk coverage will ensure that unforeseen political uncertainties, civil strife, expropriation, currency inconvertibility scenarios are covered and equity investments including financing costs for the investor are protected by US Government's sovereign risk insurance in the event of an unforeseen contingency occurring in the course of doing business in an uncertain political climate.



3.0 TARIFF STRUCTURE

CE is allowed to charge a typical two-part tariff structure with an energy charge for the energy actually dispatched and a capacity charge based on the dependable capacity for 25 years. The key components of the two part tariff are as follows:

Capacity Purchase Price "CPP"	Energy Purchase Price "EPP"
Filed O&M	Fuel Cost Component
Cost of Working Capital	Variable O&M - Foreign
Insurance	Variable O&M - Local
Debt Service	
Return on Equity	
ROE during construction	

3.1 REFERENCE TARIFF

The Company is allowed to charge, subject to adjustment of CPP on account of net dependable capacity as determined by test jointly carried out by Central Power Purchasing Agency (CPPA) and the Company, the following specified tariff, and applicable indexation, for delivery of electricity to CPPA of PEPCO for procurement on behalf of Ex-WAPDA Distribution companies:

Tariff Components	Indexation
Capacity Charge (PKR/kW/Hour)	
Fixed O&M	USD / PKR Rate
Insurance	USD / PKR Rate
Working Capital	USD / PKR Rate
Debt Service	LIBOR & KIBOR
Return on Equity	USD / PKR Rate
ROE during Construction	NIL
Total Capacity Charge	
Energy Charge (PKR / kW /Hour)	
Fuel Cost Component	Fuel Price
Variable O&M - Foreign	\$ to Rupee
Variable O&M - Local	Local WPI

3.2 CAPACITY PURCHASE PRICE

The Capacity Purchase Price is a payment for the available Dependable Capacity of the plant and is not dependent on the amount of power delivered to PEPCO. The Capacity component is payable based on a 60% utilization factor, regardless of the actual dispatch of electricity by CE.

The Return on Equity (ROE) element is included in the CPP which is indexed to USD/PKR variations. CE's capacity price has two broad components, namely the escalatable portion and the non-escalatable component.



3.2.1 ESCALATABLE PORTION

The escalatable portion includes items that are indexed to inflation and the PKR/US\$ parity. Items included in the escalatable portion include fixed operation and maintenance costs, administrative costs and most importantly the Return on Equity element.

3.2.2 NON-ESCALATABLE PORTION

The non-escalatable portion includes the debt servicing charges such as interest, principal and other debt related fees.

3.3 ENERGY PURCHASE PRICE

The EPP includes the fuel and other variable O&M cost which is incurred in the maintenance of the plant. The variable component includes variable operation and maintenance costs, which are adjusted to compensate for inflation and exchange rate movements.

a. One Time Adjustment (due to Variation in net capacity). The reference tariff will be determined at delivery point. All the tariff components except fuel cost component shall be adjusted at the time of COD based upon the Interest during construction (IDC) tests to be carried out for determination of contracted capacity. The adjustments shall be made according to the following formula:

1. Revised Fixed O&M Foreign	=	x / tested IDC x Capacity MW
2. Insurance	=	x / tested IDC x Capacity MW
3. Debt Service	=	x / tested IDC x Capacity MW
4. Return on Equity	=	x / tested IDC x Capacity MW
5. ROE during Construction	=	x / tested IDC x Capacity MW
6. Variable O&M – Foreign	=	x / tested IDC x Capacity MW
7. Variable O&M – Local	=	x / tested IDC x Capacity MW

Insurance component of reference tariff shall be adjusted as per actual on yearly basis upon production of authentic documentary evidence by CE according to the following formula:

$$\text{Insurance (Revised)} = \text{AIC / USD x million x AP}$$

Where:

AIC	=	Adjusted Insurance Component as per IDC test
AP	=	Actual Premium

Debt Service, Return on Equity and ROE during Construction shall be adjusted at COD on account of actual variation in custom duties, drawdown and Interest during Construction with reference to the estimated figures under approved tariff.

b. Pass through item

No provision for income tax has been accounted for in the tariff. If the Company is obligated to pay any tax on its income, the exact amount paid by the Company is expected to be paid by PEPCO (keeping in line with existing practice for IPPs under Power Policy 2002) to the Company on production of original receipts. This payment will be considered as pass through (as PKR. / kW / hour) monthly payment spread over a 12 month period in addition to the CPP. Subject to NEPRA's approval, any cost over-runs beyond the reasonable control of the owner is also expected to be treated as a pass-through item.

3.4 INDEXATION

The reference tariff subject to indexation is expected to be applicable as follows:



Tariff Component	Tariff Indexation & Adjustment
Fuel Cost Component	Delivered Fuel Price (inclusive of transportation) at the Power Plant
Variable O&M (Foreign Currency Portion)	US\$ to PAK Rupees & US CPI
Variable O&M (Local Currency Portion)	Pakistan WPI
Fixed O&M (Foreign Currency Portion)	US\$ to PAK Rupees & US CPI
Fixed O&M (Local Currency Portion)	Pakistan WPI
Cost of Working Capital	KIBOR
Return on Equity	US\$ to PAK Rupees
Withholding Tax on Dividend	Nil
Principal Repayment (Foreign Currency Loan)	US\$/Euro/Yen/Pound to PAK Rupees (based on borrowing by the Company)
Principal Repayment (Local Currency Loan)	Nil
Interest//Mark-up Payments (Foreign Currency Loan)	Adjustments for relevant LIBOR or other applicable Interest Rate benchmark Adjustment for variation in Rs/Foreign Currency (US\$/Euro/Yen/Pound) as applicable
Interest//Mark-up Payments (Local Currency Loan)	Adjustments for relevant KIBOR

3.4.1 INDEXATION APPLICABLE TO O&M

50% of fixed O&M part of capacity charge will be adjusted on account of inflation (WPI) and 50% on account of variation in US CPI and Dollar / Rupee exchange rate. Quarterly adjustment for local inflation, foreign inflation and exchange rate variation will be made on 1st July, 1st October, 1st January, and 1st April based on the latest available information with respect to WPI notified by the Federal Bureau of Statistics US CPI issued by US Bureau of Labor Statistics and revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexation will be as under:



3.4.2 FIXED O&M

F O&M RE	=	US cents x per kW per hour x 50% x WPI E / 125.67
F O&M FRE	=	US cents x per kW per hour x 50% x ER RE / 62.75
Where		
F O&M (LREV)	=	The revised applicable fixed O&M component of the capacity charge indexed with WPI
F O&M (FREV)	=	The revised applicable fixed O&M component of the capacity charge indexed with currency fluctuation
WPI (REV)	=	The revised Wholesale Price Index (Manufacturers)
Reference WPI	=	125.67 WPI (manufacturers) of December 2007 notified by the Federal Bureau of Statistics
ER (REV)	=	The revised TT & OD selling rate of US\$ as notified by the National Bank of Pakistan

Note: The reference numbers indicated above are subject to revision after incorporating the required adjustment at COD.

3.4.3 VARIABLE O&M

The formula for indexation for variable O&M component will be as under:

V O&MG (FREV)	=	US cents x per kWh x ER FRE / 62.75
V O&MG (RE)	=	US cents x per kWh x WTI E / 125.67
Where:		
V O&M (FREV)	=	The revised applicable variable O&M component of energy charge indexed with US CPI and Exchange rate variations.
ER (REV)	=	The revised TT and OD selling rate of US dollar as notified by the National Bank of Pakistan

Note: The reference VO&M indicated above shall be replaced with the revised number at COD after incorporating the required adjustment based upon the IDC test.

3.4.4 ADJUSTMENT FOR KIBOR VARIATION

The interest part of fixed charge component will remain unchanged throughout the term except for the quarterly adjustment due to variations in interest rate as a result of variation in KIBOR according to the following formula:

ΔI	=	$P(\text{REV}) \times (\text{KIBOR}(\text{REV}) - 10.45\% / 4$
Where		
ΔI	=	The variation in interest charges applicable corresponding to variation in KIBOR. ΔI can be positive or negative depending upon whether KIBOR REV > or < 10.45%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each quarter under adjustment applicable on quarterly basis.
P(REV)	=	Is the outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculations date. Period 1 shall commence on the date on which the 1 st installment is due after availing the grace period.



3.5 FUEL PRICE VARIATION

The variable charge part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations as and when notified by the relevant authority, being the OMC. In this regard, the variation in Company's allowed rate relating to fuel cost shall be revised according to the following formula:

FC (Rev)	=	US cents x per kWh x FP(Rev) / FP (Base)
Where:		
FC (Rev)	=	Revised fuel cost component of variable charge on RFC)
FP (Base)	=	Base price of RFC), as per Tariff Determination
FP (Rev)	=	New price of RFC) as notified by the relevant authority expected to be specified per MMBTU of fuel adjusted for LHV-HHV factor

Adjustment on account of local inflation, foreign inflation, foreign exchange variation, KIBOR variation and fuel price variation is expected to be approved and announced by the authority for the immediate application within 7 working days after receipt of CE's request for adjustment in accordance with the requisite indexation mechanism stipulated herein.

3.6 TERMS AND CONDITIONS OF TARIFF

- I. All new equipment installed and the plant will be of standard configuration.
- II. Dispatch criterion will be based on the energy charge.
- III. General Assumptions of the Company, which are not covered in the tariff determination, may be dealt with in the PPA according to its standard terms.



4.0 THE PROJECT

4.1 PROJECT PROFILE

4.1.1 THE PROJECT

The project entails setting up an approximate 500 MW power plant (the "Project") on the BOO (Build Operate Own) concept. Cavalier Energy (CE) is setting up a combined cycle technology based Power Plant on dual fuel (LPG as primary fuel and natural gas as secondary fuel) in Karachi at Port Qasim.

Full details of the technology to be used will be provided by CE and are provided in the Appendix. The setting up and management of the power plant will be as follows:

The selected EPC will act & serve as the EPC (Engineering, Procurement and Construction) for the project. The selected EPC will be a world class and leading supplier of power plants for the decentralized power generation market. It will have extensive experience in power plant solutions based on oil, gas, specifically LPG and dual-fuel gas turbines and combined cycle power plants. Being the EPC contractor for Cavalier's Thermal Project, the EPCC will have access to its international technical resources and parts distribution networks. The contractor guarantees availability, plant output and heat rate for the contracted period, thus minimizing the technical risk of the project.

The Operation and Maintenance (O&M) of the LPG plant will be contracted to a firm of international standing, a reputable O&M contractor. The O&M contract will cover minimum performance standards of the plant. The selected O&M contractor will have both regional and corporate resources to assist plant personnel in all O&M related areas and access to the EPCC's technical resources and parts distribution networks. The O&M contract of the LPG plant will be multi-year long-term O&M contract to run CE's LPG plant, with an option for extension of the contract. The O&M contractor guarantees plant availability, heat rate and net plant output for the contracted period, thus minimizing the technical risk of the project to Cavalier.

4.1.2 THE SITE AND INFRASTRUCTURE

4.1.2.1 EXISTING AND REQUIRED INFRASTRUCTURE

The proposed power plant is to be located in the vicinity of Karachi at Port Qasim, and will be developed to serve the project's land, logistical, water, and drainage requirements.

4.1.2.2 FUELS AND STORAGE CAPACITY

The primary fuel of the power plant is LPG. According to the regulations, all power plants are required to keep provision for 30 days' storage capacity. The same will be fulfilled through erection of on-site fuel storage and pumping facilities, whereby fuel will be delivered to the project site and stored. A separate pipeline/pumping system will be constructed to transfer fuel from the storage tanks to the power plant.



4.1.2.3 FUEL SYSTEM

LPG is the main fuel for the power plant. The LPG shall be provided through a pipe from storage tanks into the buffer tank.

4.1.2.4 INTERCONNECTION FOR POWER DISPERSAL

Through detailed power flow studies conducted, the most suitable connection will be identified for construction in consultation with PEPCO. The line is to be built within the same time schedule as the plant itself. The power purchaser (PEPCO) will construct and finance this connection.

4.1.2.5 ENVIRONMENT

A No Objection Certificate will be obtained from the Environmental Protection Agency for the Project. Furthermore, the plant design is compliant with major emissions limit protocols. The stack emissions of the plant are clearly within the limits of the World Bank. The plant will likely be equipped with modern Continuous Emission Monitoring System (CEMS) for recording and reporting air pollutants.

4.1.3 PROJECT AGREEMENTS

An important consideration for large infrastructure projects is the duality and strength of its contracts and agreements as these contracts will be the backbone of the entire project. Well drawn-out documents are instrumental in removing potential risks and ailments from the projects as well as firmly securing the interests of the investors as well as the Financiers through a well managed and tightly knit mechanism.

The GOP will guarantee that the terms and conditions of executed agreements (i.e. the Implementation Agreement (IA), Power Purchase Agreement (PPA)), including payment terms, that are maintained during the term of the agreements for projects above 50 MW. The benefit to Cavalier is the acceptance by the GOP of bankable documents signed with IPPs under the 2002 power policy. This is a major advantage to the IPPs negotiating with GOP currently in terms of cost and time savings.

The likely structure of the project agreements will be as under:

4.1.3.1 POWER PURCHASE AGREEMENTS ("PPA") / OFF-TAKE AGREEMENTS

The PPA, which secures the project's revenue streams, is the most important commercial agreement. The 25-year agreement also defines the interface between CE and PEPCO.

The PPA shall detail the rights and obligations of the parties to the PPA, with respect to the operation of the project, and is likely to be structured along the following parameters:

- The PPA becomes effective in its entirety (Effective Date) upon the date of Financial Closing and delivery of the CE L/C, in exchange for the return of the original Performance Guarantee by the PPIB.
- The term of the PPA will extend until the 25th anniversary of the Commercial Operation Date, which will occur on successful completion of the Commissioning Tests.
- PEPCO will take delivery of electrical energy during the Commissioning Period, which includes testing after synchronization with the grid. The Power Purchaser will pay for energy generation during the Commissioning Period based on tariff provisions or mutual agreement between PEPCO and CE.
- CE shall be responsible, post-COD, for providing Contract Capacity and delivering Dispatched Net Electrical Output, adjusted to ambient site conditions.



- The Power Plant shall be designed and constructed with new and unused equipment in accordance with the Technical Specifications, Laws of Pakistan, Prudent Utility Practices, and Prudent Electrical Practices, so that the Power Plant will have a useful life of not less than the term of the PPA but does not preclude the use of refurbished materials for maintenance following Commercial Operation. Normal provisions for progress reporting, test reporting and provisions of test results and other documentation will likely be specified.
- CE shall arrange, and provide proof to PEPCO to the same effect, for a reliable Fuel Supplier and transportation source, through the FSA, storage handling and processing of the fuel at the project site. CE would be required, as per guidelines, to provide for up to 20 days worth of plant consumption at 100% load factor.
- The pricing terms for fuel, including price adjustment or indexation, minimum off-take obligations, and measurement of fuel units for sale under the Fuel Supply Agreements will be subject to GOP's approval.
- CE would have to notify Maintenance and Non-Maintenance Months to PEPCO in advance every year, so that Scheduled Outages allowed annually could be taken into account by PEPCO accordingly.
- Scheduled Outages and Forced Outages would be allowed up to certain limits, without liquidated damages, as per NEPRA determination.
- Start-Ups up to a certain amount, estimated at 220, per annum will be free of cost to PEPCO (having already been built into tariff). Start-Ups in excess of 220 in any given year would be charged to PEPCO.
- CE would have to provide technical specifications of the project to PEPCO, so that the latter can design and construct interconnection facilities accordingly. The interconnection facilities would have to be in place in order to commence commissioning tests as per EPC contract. The completion of interconnection facilities would likely be achieved by PEPCO to allow adequate time for project commissioning, in order to maintain RCOD target.
- CE would likely receive only Fuel Cost Component of the Energy Price for Net Electrical Output prior to RCOD. However, PEPCO would be making both Capacity and Energy Price along with additional tariffs and payments, as per Tariff Notification, post-COD.
- Fluctuations in the following would be pass-through items to PEPCO
 - o KIBOR
 - o PKR/USD exchange rate
 - o PKR/Euro exchange rate (only on COD for EPC contract amount)
 - o Variable O&M
 - o Fuel cost, determined as per formula intimated in NEPRA determination and followed in pricing fuel in the FSA with the fuel supplier.

4.1.3.2 IMPLEMENTATION AGREEMENT ("IA")

The Implementation Agreement (IA) will be executed between CE and the GOP, and shall detail rights and obligations of the parties to the IA, with respect to setting up and long-term operation of the project.

CE will be bound to ensure execution of the project with regards to design and engineering, financing, insurance, construction, ownership and operation of the project in accordance with the Project Agreements and applicable laws and regulations of Pakistan.

The Implementation Agreement will become effective on the date of Financial Closing. The term of the Implementation Agreement extends until the 25th anniversary of the Commercial Operation Date, as defined in the Power Purchase Agreement. The IA is likely to be structured along the following parameters:

- GOP will guarantee performance obligations of PEPCO under the Power Purchase Agreement;
- GOP will provide protection against political force majeure events;
- GOP will provide protection against changes in the taxes, levies and duties regime from the date of tariff determination.



4.1.3.3 FUEL SUPPLY AGREEMENT ("FSA")

CE will enter into a long term FSA (Fuel Supply Agreement) with LPG supply companies in the Middle East and Russia for supply of LPG to the project. Under the FSA, the LPG supplier will be responsible for providing LPG. LPG as ordered by CE over the contract's term is likely to be in 10 year periods, extendable up to the 25th anniversary of the COD.

The LPG supplier will be required to meet quality specifications, consistent with specifications in the EPC Contract. The LPG supplier will be responsible for payment of damages to CE resulting from its failure to deliver LPG, as ordered by CE. Damages would include lost Capacity Payments and reimbursement of other liquidated damages as specified in the Power Purchase Agreement, except if CE had not maintained LPG storage quantities in accordance with Power Purchase Agreement requirements or if failure to deliver was on account of Force Majeure.

4.1.3.4 ENGINEERING, PROCUREMENT AND SUPPLY CONTRACTS ("EPC")

CE will likely enter into the following EPC contracts:

- "Equipment Supply Contract" ("ESC" with E&P Contractor)
- "Construction Services Contract" ("CSC" with Construction Contractor)

CE has been seeking an experienced, international energy company, to participate in the equity investment of the project, **and/or** as EPC main contractor to take responsibility for the future administration, operation and maintenance of the completed facility. The selected Operator will enjoy the rate of return of its investment from the income of the completed Facility as well as an annual Operator's Bonus expressed as a percentage of Net Operating Income.

The E&P Contractor's responsibilities will likely include:

- Design and engineering, procurement, and manufacture of the plant equipment as per technical specifications
- Transport of plant equipment to the designated Port of Import (Karachi) on CIF basis.
- Handling, inspection and shipping of the plant equipment up to the Port of Import
- Provision of additionally specified tools for operation of the project facility, in addition to recommended nature and source of spare parts for effective O&M.
- Provision of commissioning spare parts for start-up and commissioning tests. These shall remain the property of the E&P Contractor.

The Construction Contractor's responsibilities will likely include:

- Arrangement and execution of customs clearance, handling and transportation of plant equipment from Port of Import to the project site
- Construction and installation of the Project in accordance with the design and engineering provided by the Equipment Vendor
- Start-up, testing and commissioning of the Project
- Provision of utilities, temporary roads, drinking water and sanitary facilities, office and telephone facilities within the site, for effective execution of Project work.
- Prevention of accumulation of hazardous material(s) on the project site.

CE's responsibilities to both contractors will likely include:

- Provision of Facility Site plan, describing site boundaries and coordinates, access-roads and preliminary utilities' interconnection points.
- Provision of Site topography and subsoil conditions, and plans of Site leveling (grading)
- Provision of reasonable ingress and egress routes to the nearest public road



- Provision of necessary utility, sewerage and waste water lines up to the boundaries of the Site, in order to facilitate construction
- Provision of temporary storage area on site
- Provision of necessary government and regulatory approvals for the construction, testing and commissioning of the project
- Provision of qualified personnel in a timely manner, in order to support commissioning tests (to be achieved through O&M contract)
- Provision of plant equipment in a timely manner (to be achieved through the Equipment Supply Contract)
- Provision of Interconnection Facilities in a timely manner to achieve COD date (to be provided by PEPCO)
- Provision of materials and spares for commissioning tests (to be provided through Equipment Supply Contract and FSA)
- Removal/remediation of hazardous materials (if any) on the project site. In case of preexisting hazardous materials, CE would issue Change Order to Construction Contractor for removal of the same, with additional compensation as per contract specifications, along with appropriate extension in the Guaranteed Completion Date.
- In case piling is required to complete construction in line with good engineering practice, CE would issue Change Orders to Construction Contractor for ensuring the same, with additional compensation as per contract specifications, along with appropriate extension in the Guaranteed Completion Date.

Both the E&P and Construction Contractors will be responsible individually for posting a Performance Guarantee, to the extent of 20% of the respective Contract Prices as performance security up to the date of completion of work as per EPC contracts. Upon completion of work, the E&P Contractor would likely provide a Guarantee of 10% of the E&P Contract Price for the Primary Warranty Period (not more than 24 months after the generator sets arrive in Pakistan). Likewise, the Construction Contractor would likely provide Guarantee of 20% of the Construction Contract Price for the Primary Warranty Period. The guarantee(s) to be provided during the Primary Warranty Period would either be fresh guarantee(s) or the guarantee(s) initially provided (with tenor and/or amount accordingly modified).

The contractors are responsible for preparing Programs which identify the schedules for completion of major engineering, procurement, construction and testing requirements. Progress for both contracts will be monitored by CE and the respective contractors' representatives on a monthly basis.

The design must comply with the Project Technical Requirements and a variety of specified international standards, as identified in the Project Technical Requirements. The E&P Contractor is responsible for providing as-built drawings and operation and Maintenance manuals.

The Starting Date for the EPC contracts will occur upon:

- Arrangement of guarantees between the EPC contractors and CE
- Down-payment to EPC contractors by CE.
- Issuance of certificate from CE to EPC contractors confirming that all necessary governmental approvals have been obtained.
- Issuance of notice by CE to EPC contractors to proceed
- Project Site has been made available with access road and utility connections at site boundaries
- Receipt by E&P Contractor of the Equipment L/C

The following Performance Guarantee Levels are to be specified in the EPC Contracts:

- Net Electrical Capacity
- Maximum Heat Rate
- Completion Date

The Commissioning Tests shall be deemed to be successfully completed and the COD achieved when the EPC Contractors have successfully completed the requisite criteria, as per specifications in the agreements.

The EPC Contractors shall likely warrant that the design shall be free of defects and that the Major Equipment, Materials, and Works are subject to a Warranty Period of 12 months from the COD (Primary Warranty Period).



The Warranty Period will be extended for G months for any repair or replacement work during the Warranty Period.

The Contract Prices for the EPC contracts will be payable based on completion of milestones, with milestone amounts as set forth in the EPC Contracts. The E&P Contractor and Construction Contractor will provide, upon payment of Milestone Payment 2 and 1, respectively, a Down-Payment Guarantee equal to 20-23% of the respective contract prices. The Down-Payment Guarantees will be available for remedial measures to CE in case of Event of Default by the respective Contractors.

The EPC Contractors will be responsible, in turn, for care of the work from the Starting Date until the Final Completion Date or until engagement by CE of all or some portion of the project in commercial operations. The EPC Contractors' total liability for liquidated damages, due to breach of performance guarantee levels is limited to 20% of the respective Contract Prices.

4.1.3.5 OPERATIONS AND MAINTENANCE CONTRACT ("O&M")

The Operation and Maintenance (O&M) of the LPG plant may be contracted to the EPC contractor. The O&M contract will cover minimum performance standards of the plant in conjunction with appropriate commercial insurance cover. The operator will likely guarantee availability, plant output and heat rate for the contracted period, thus minimizing the technical risk of the project.

4.1.4 PLANT JUSTIFICATION AND SELECTION OF TECHNOLOGY

4.1.4.1 Fuel Demand-Supply Analysis

To justify Gas Turbine technologies based on LPG, it is important to highlight the gas demand-supply scenario in Pakistan to understand the recent trend towards RFO/alternate fuel based power plants.

Domestic Gas Availability

	FY07	FY08	FY10	FY11	FY12	FY13	FY14	FY15	FY20	FY25
Supply	3,666	4,184	4,308	4,313	4,181	4,065	3,815	3,674	2,521	2,167
Demand	4,013	4,492	5,086	5,516	5,921	5,912	6,305		8,854	13,259
(Shortage) / Excess	(346)	(308)	(778)	(1,203)	(1,740)	(1,847)	(2,490)	(3,089)	(6,333)	(11,092)

Source: PWC/Hagler Bailly Pakistan, Dec. 2006

The widening gap between the supply and demand of gas is clear in both the short-term and the long-term. The alternative fuel for thermal power generation, Furnace Oil, remains abundant in the local market as most refineries have adequate production capacity for this fuel. In addition, several new mega refineries and smaller refining projects have been announced which point towards the abundant future local production of furnace oil. CE is the first mover in Pakistan for LPG thermal power. It is therefore easier now to understand the tariff of US 14.49 cents per kWh negotiated with GOP.

4.1.4.2 Combined-Cycle Gas Turbine technology

The hot gas path lies along the combustion chambers, turbine nozzles and rotating blades. These are specially produced from nickel alloys and coated with platinum or chromium to resist corrosion under high temperatures during operation. These parts have design tolerances for heat corrosion primarily, and are highly susceptible to corrosion through extra contaminants like sodium, potassium and vanadium, which are present in fuel oils. A small amount of these contaminants can cause material corrosion.

Additionally, fuel oils contain ash deposits that can result in gas turbine de ratings of up to 15%. Operational efficiencies are also impacted due to:



- Costs of additives to counteract corrosive contaminants
- Lower availability due to additional maintenance and water cleaning of blades to remove ash deposits
- Lower plant life

The major design factors impacting efficiency include mass flow, compression ratios and firing temperatures. The gas turbine is also hampered in its inherent design by susceptibility to ambient site conditions. High site temperatures and elevation both reduce air density, which reduces mass flow through the gas turbine. LPG/Diesel plants are not impacted as severely.

Plant efficiency

A combined cycle plant would offer total efficiency in the range of 51 to 52 % on gas firing,

Plant availability

A combined cycle gas turbine plant can have an availability of 94-95 % on gas/distillate...

Operations & Maintenance

Most of Gas Turbines currently installed in Pakistan are running on heavy fuel oil which means more frequent maintenance interventions compared to gas firing. GE states that LSFO type fuel reduces the operating hours between the prescribed maintenance actions by factor of 3-4. The factor is even higher if water or steam injection is used for NO_x-control (required by Environmental Protection Agency). The major overhaul has to be executed on these LSFO fired machines every two years or in the worst case annually. The heat recovery system, HRSG will also need periodic cleaning as LSFO combustion products will gradually precipitate onto its heating surfaces. One combined cycle gas turbine plant with three units firing LSFO and one steam turbine will need some 3.7 million USD p.a. for its fixed O&M. The variable O&M cost including consumables and spare parts is estimated at 7 USD/MMTh while operating on LSFO. These costs will be significantly reduced since Cavalier Energy has chosen to use LPG which is one of cleanest fuels available.

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4.1.4.3 Suitability of technology for peak-load generation

Upon the eventual commissioning of hydel power generation projects in Pakistan, base-load requirements are expected to be met increasingly through hydel generation as a primary preference. In the event that Pakistan finally reaches a position of surplus power generation capacity, thermal IPPS would be faced with the prospect of being classified as **peak-load facilitators** rather than base-load suppliers.

Partial load demands from PEPCO could push up the cost of CCGT generation to as much as 20% above the cost of simple cycle generation, as has been shown by the past experiences in developed countries. This would significantly downgrade the preference of thermal IPPs based on reciprocating engine technology against those based CCGT especially on a CCGT plant being run on LPG. Hence it is anticipated that the LPG based CCGT power plant would continue to be the preferred option for PEPCO even in of surplus power generation capacity.

4.1.4.4 Comparison of plant concept alternatives

Based on the above, a comparison of alternative technologies would necessarily be focused on LPG as primary fuel. The following potential thermal plant technologies are analysed, applicable for LPG firing at capacity ranges around 500 MW:

- Steam Turbine Plant
- Simple Cycle Gas Turbines
- Combined cycle gas turbines
- Diesel engine 4-stroke simple cycle
- Diesel engine 4-stroke combined cycle
- Diesel engine 2-stroke simple cycle



Plant Concept	Steam Plant	Simple Cycle	Combined Cycle	Diesel 4-stroke simple cycle	Diesel 4-Stroke Combined Cycle	Diesel 2 stroke simple cycle
Net capacity at site conditions (new and clean), MW	500.0	490.0	490.0	490	495	490
Net average capacity at site (including ageing), MW	500.0	460.5	470.0	480	485	475
Net efficiency at site conditions (new and clean), %	40.0	34.5	50.1	43.2	47.0	43.6
Net average efficiency including fouling, sludge and ageing.	39.0	32.5	44.0	41.9	45.5	42.3
Average availability,	90	92-94	94-96	94	94	94
Reliability, %	96	98	98	98	98	97

The concept "LPG combined cycle" has a medium to high capital cost, low O&M costs, gives the best overall efficiency and relative to other concepts is flexible and therefore can be operated base load at a load factor of around 90% or just for peaking/ reserve service with a load factor of 15% to 20%. For tariff setting the plant load has been assumed at 60%.



5.0 PROJECTED FINANCIAL PERFORMANCE

PROJECTED 25 YEARS CASHFLOW STATEMENT

(Note: An Islamabad based CPA Firm affiliated to 1 of the International Big 5 accounting firms will give an opinion and prepare full pro-forma financial statements when required)

CAVALIER POWER PROJECT Cash flow (F) over Project Term

Year	Total Tariff	Total Revenue	Expenses (PKR Millions)							Free Cashflows (PKR Millions)
			Fuel	O&M	Insurance	Interest on Working Capital	Interest Charges	Loan Repayment	Total	
1	9.69	23,944.61	16,238.82	596.05	327.52	160.16	2477.85	1,985.72	21,786.13	2,158.48
2	9.69	23,944.61	16,238.82	596.05	327.52	160.16	2305.61	2,157.96	21,786.13	2,158.48
3	9.69	23,944.61	16,238.82	596.05	327.52	160.16	2,117.94	2,345.62	21,786.13	2,158.48
4	9.69	23,944.61	16,238.82	596.05	327.52	160.16	1,913.41	2,550.16	21,786.13	2,158.48
5	9.69	23,944.61	16,238.82	596.05	327.52	160.16	1,690.40	2,773.17	21,786.13	2,158.48
6	9.69	23,944.61	16,238.82	596.05	327.52	160.16	1,447.18	3,016.38	21,786.13	2,158.48
7	9.69	23,944.61	16,238.82	596.05	327.52	160.16	1,181.83	3,281.74	21,786.13	2,158.48
8	9.69	23,944.61	16,238.82	596.05	327.52	160.16	892.21	3,571.36	21,786.13	2,158.48
9	9.69	23,944.61	16,238.82	596.05	327.52	160.16	576.00	3,887.57	21,786.13	2,158.48
10	9.69	23,944.61	16,238.82	596.05	327.52	160.16	230.61	4,232.96	21,786.13	2,158.48
11	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
12	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
13	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
14	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
15	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
16	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
17	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
18	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
19	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
20	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
21	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
22	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
23	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
24	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48
25	7.89	19,481.04	16,238.82	596.05	327.52	160.16	-	-	17,322.56	2,158.48

Total Equity	9,934.21 PKR Millions
IRR before deduction of Withholding Tax	21.56%
IRR after deduction of Withholding Tax	20.00%

6.0 INDUSTRY OVERVIEW

6.1 DEMAND FOR POWER GENERATION

Electricity demand in the country is to rise by 40% by 2010, propelled by an expanding economy and pent-up demand. The government has initiated an aggressive generation expansion plan in anticipation of the growing electricity hunger - 13.4 GWH' (69%) by 2016 - and is committed to (both financially and policy-wise) implementing it.

By 2015 some 15,000 MW new capacity would need to be installed. This would require more than 1500 MW to be constructed each year just to cover the growth. Additionally some of the old thermal generating plants would need to be replaced. In total, the need for new capacity will be in the range of 2000 MW per year.

This is a newfound long-term earnings growth opportunity for Pakistan's key Independent Power Producers (IPPs), where secure, high and transparent free cash flows, as well as strong lowly geared balance sheets support plans to add new capacity.

6.2 COUNTRY-LEVEL POWER DEMAND AND SUPPLY ANALYSIS

The findings of a detailed research conducted have been summarized as follows:

- Pakistan's electrical power demand is predicted to grow relatively fast; normal GDP development means 8% per annum increase in electrical power demand within the next ten years. The national power plant capacity has to be more than doubled, approximately 2000 MW new capacity per year.
- WAPDA alone to take care of the required generation capacity - private investors are attracted to generation
- Total losses in the national system are over 20%, generation close to the consumers would reduce the loss percentage.

An assessment of the supply and demand for electricity at the country level is provided below:

6.2.1 SUPPLY

At present there are two vertically integrated power supply companies operating in Pakistan, i.e. Water and Power Development Authority (WAPDA) and Karachi Electric Supply Corporation (KESC). WAPDA is responsible for supplying electricity to various sectors of the economy across the country, apart from the metropolis of Karachi, which is supplied by KESC.

6.2.2 INSTALLED CAPACITY AND TOTAL CAPACITY

The total installed capacity of the WAPDA system is around 17,244 MW, which constitutes 10,755 MW thermal power, 6,459 MW in hydropower and 325 MW in nuclear. Of this total thermal capacity, 4715 MW is operated and maintained by various corporatized entities of WAPDA known as generation companies (GENCOs), while 5715 MW is operated and maintained by the private sector.

The power plants operating under WAPDA system are old and have depreciated through natural wear and tear. As a result, the system's actual capability is much lower than installed capacity.

The installed hydropower capacity of the WAPDA system is not available all year round, since both major water reservoirs supplying electricity, i.e. Mangla and Tarbela are geared towards irrigation purposes with power being produced as a by-product.



6.2.3 DEMAND

Until 1990, the demand for power in Pakistan grew at a high annual rate of 8-10% in the WAPDA system. In order to meet this demand, additional generation capacity was installed. However, this construction eventually failed to meet the growing demand for power, making it necessary to introduce load shedding. By the early 1990s, the country was facing an acute power shortage, and WAPDA was forced to continue heavy load shedding, badly affecting the social and industrial sectors. In 1994, the Government invited the private sector to invest in power generation, announcing an investor friendly power policy to encourage private investment. The policy offered an upfront tariff, allowing investors to install power plants at locations of their choice. The policy received an overwhelming response from the private sector and some excess capacity was contracted.

Electricity supply is a prime mover of economic development. This is evident in the way it has increased in parallel with gross domestic product (GDP) - until 1990, Pakistan's GDP growth ranged from 4.8% to 6.4%, while the demand for power increased at a correspondingly high rate. This was followed by an economic slump.

6.2.4 THE DEMAND / SUPPLY CONUNDRUM

The most glaring fact about the power sector in Pakistan is that as demand grows at an unprecedented pace, the industry simply does not generate enough electricity to meet the country's needs. Even with an installed capacity of 19.4 GW, barely 50% can be used in active generation. Currently, electricity demand is approximately 15.5 GW against a guaranteed supply of 15 GW. The Private Power Infrastructure Board (PPIB) anticipates the gap between power demand and supply will grow to 5.5 GW by 2010 in a zero capacity addition scenario.

6.2.5 STAGE SET FOR STRONG DEMAND GROWTH

A combination of factors is setting the stage for continued growth in electricity demand - stable economic and industrial growth with GDP and LSM (Large Scale Manufacturing) growth expected to exceed 6.5% and 16%, respectively, over the next three years, current low electricity penetration, annual population growth of 1.8% with an increasing drift towards urbanization and the government's rural electrification program. It is anticipated that the demand for electricity will grow by at least 1.25x GDP over the next couple of years.

6.2.6 STRONG CORRELATION WITH GDP GROWTH

Demand for electricity, correlates closely with and is being fuelled by a rapidly growing economy. Pakistan has sustained above-trend GDP growth in the past three years (averaging 7.6% vs. a 10-year average of 3.9%). Demand grew by 6.67% in 2005 and is estimated to have grown by nearly 13% in 2006.

6.2.7 PER CAPITA CONSUMPTION

Another element spurring potential demand growth is the currently low penetration of electric supply in the country, where less than 60% of the population has access to electricity.

Compared to its regional peers, Pakistan lags well behind with an extremely low per capita electricity consumption of 400W pa. Low electricity penetration suggests that the demand numbers as we see them today may be understated. Suppressed demand implies that potential demand could grow further as and when supply becomes available.



7.0 THE PROJECT SPONSORS

The project sponsors are Cavalier Energy & Defense Systems Group (CEDSG) and Global Edison Corporation. The CEDSG is principally engaged in the supply of goods to the Pakistani Government. Global Edison Corporation develops, finances, builds and manages power plants. CEDSG currently holds 100% equity for the 25 year concessionary rights to own and operate the 500 MW Karachi Thermal Power Plant.

Global Edison has incorporated an American holding company to hold the concessionary rights for the 500 MW Karachi Thermal Power Plant and to optimize on OPIC risk insurance (www.opic.gov) and US EXIM Bank financing for plant and equipment.

Cavalier Energy Corporation, U.S.A.

Cavalier Energy Corporation is an American Corporation currently owned by Cavalier Energy Group., private Pakistani business group, based in Islamabad, Pakistan; and 2) Global Edison Ltd., a company engaged in the development of power projects and a shareholder in Cavalier USA..

Cavalier Energy Corporation, USA was formed as a special purpose entity to:

- Receive the concession award, and to develop, own and construct the Port Qasim Power Project to provide a long-term source of clean, economical energy and to reduce the region's dependence on oil-fired generation.
- Apply for sovereign risk coverage for the project's insurance with the US Government backed Overseas Private Insurance Corporation which offers comprehensive sovereign risk coverage for projects with 51 % or more US Entity ownership

7.1 THE ENTREPRENEUR & HIS TEAM

Mr. Waseem Pasha Tajammal, a Pakistani national in his early 40s is the entrepreneur behind the Cavalier Group. Pasha was instrumental in CE securing the 25 year concessionary rights to own and operate the 500 MW Karachi Thermal Power Plant. Pasha is the son of a distinguished general and has himself served in the Pakistani armed forces before starting the Cavalier Energy & Defense Systems Group.

Pasha has joined forces with Global Edison, an experienced US based project manager for power plants in Asia including Afghanistan, as project managers for the Port Qasim power plant. Global Edison is advising Pasha on key issues as they emerge for setting up the Port Qasim plant and is an equity partner as well.

Mr. Rod Johnson, President of Global Edison has extensive experience of setting up power plants and his family has been in the Oil & Gas and Power Generation business for three generations. More can found about Global Edison by visiting their website (www.globaledison.com)

On the technical side, Mr. John Champion, CEO of APR Energy LLC, USA. Mr. Champion was the pioneer to start the power rentals business and he was the person who formed General Electric Power Rentals. Later he formed his own company as a licensee of Alstom Group under the name of Alstom Power Rentals.

Mr. Champion has set up more power plants with a cumulative total of more than 2000 MWs and has extensive experience of setting up and operating power plants.



8.0 POWER POLICY 2002

RELEVANT EXTRACTS FROM POWER POLICY 2002

8.1 TARIFFS

8.1.1 Point of Delivery

The power tariff payable under the PPA will be quoted at the point of delivery indicated in the RFP. The delivery point will either be the bus bar of the power plant or a specific location on the grid of the power purchaser, depending upon one of the following options specified in the RFP:

- (a) The transmission line up to the power complex will be built, owned, maintained and operated by the power purchaser. In this case, the power tariff will be the bid and paid for energy and net capacity delivered at the out-going bus bar of the power plant.
- (b) The transmission line from the power complex to the grid will be built by the company and transferred to the power purchaser, who will then own and operate the transmission line. In this case, the power tariff will be the bid and paid for energy and net capacity delivered at the out-going bus bar of the power plant. The Sponsors will build in the cost of the transmission line in their tariff quote.
- (c) The transmission line from the power complex to the grid will be built by the power purchaser and the Sponsors jointly and will then be transferred to the power purchaser, who will then own and operate the transmission line. In this case, the power tariff will be the bid and paid for energy and net capacity delivered at the out-going bus bar of the power plant. Details of cost sharing will be delineated in the RFP.
- (d) Any other arrangement different from the above.

8.1.2 Fuel Cost

For projects requiring substantial investment in dedicated production and/or transportation facilities for indigenous fuel, expenses would be accounted for in the power tariff in the form of capacity and energy charges.

8.1.3 Tariff Structure

8.1.3.1 Capacity and Energy Components

Bidders have been asked to quote their tariff in two parts: (1) Energy Purchase Price (EPP) and (2) Capacity Purchase Price (CPP).

The RFP may specify a maximum percentage of the overall tariff for the capacity component. The CPP in case of hydel projects, which traditionally have a relatively low EPP, will be approximately 60% to 66% and the EPP will be approximately 40% to 34^o/4 of the levelized tariff.

The CPP will be expressed in Rs/kW/month; the EPP in Rs/kWh. The CPP will be paid provided the plant is available for dispatch to standards defined in the PPA. The EPP will be paid based upon the amount of kWh of energy dispatched.

In order to ensure sustained interest of the Sponsor during the entire life of the project, the sum of EPP and non-debt related CPP (computed on a kWh basis at the reference plant factor specified in the RFP) will remain constant or increase over time. The debt-related CPP stream may match the loan repayment stream.



8.1.3.3 Fuel Charges

The EPP for thermal projects will consist of fuel component based on fuel price and variable operation & maintenance charges.

8.1.3.4 Exchange Rate Variations

Bidders included separate components in the CPP and the EPP which are subject to adjustment only for variations in the exchange rate between the Pakistan Rupee and US Dollar, between the reference date and the date of payment.

The reference rate for foreign exchange was the National Bank of Pakistan (NBP) TT&OD selling rate of the US Dollar prevailing thirty (30) days before the required date of bid submission. The specific reference date will be stated in the RFP.

Adjustment for exchange rate fluctuations will be effected quarterly. Exchange rate fluctuations in excess of 5% during any month will be allowed.

8.1.3.5 Escalation

Escalation for dollar components to cover dollar inflation will not be provided. However, bidders may include components in the EPP and CPP, which are escalatable for Pakistan Rupee inflation. Such Pakistan Rupee escalation will be effected from the bid submission date by the Pakistan Wholesale Price Index (WPI) for 'manufacturing' as notified by the GOP's Federal Bureau of Statistics (FBS). The reference value of the %XTI for 'manufacturing' will be the most recent value notified (not less than thirty (30) days before the date of submission of the bid) unless notified otherwise in the RFP. The RFP will specify the actual date for this reference value of WPI for 'manufacturing'. Escalation will be effected quarterly.

8.1.4 Yearly Profile of Tariff

All Sponsors would be required to submit yearly tariff profiles in real terms at the time of bidding.

8.2 FINANCIAL AND FISCAL REGIME

8.2.1 Financial Regime

This policy offers the following set of financial incentives:

- (a) Permission for power generation companies to issue corporate registered bonds.
- (b) Permission to issue shares at discounted prices to enable venture capitalists to be provided higher rates of return proportionate to the risk.
- (c) Permission for foreign banks to underwrite the issue of shares and bonds by the private power companies to the extent allowed under the laws of Pakistan.
- (d) Non-residents are allowed to purchase securities issued by Pakistani companies without the State Bank of Pakistan's permissions and subject to the prescribed rules and regulations.
- (e) Abolition of 5% limit on investment of equity in associated undertakings.



- (f) Independent rating agencies are operating in Pakistan to facilitate investors in making informed decisions about project company's Bonds/TFCs.

8.2.2 Fiscal Regime

This policy offers the following set of fiscal incentives:

- (a) Customs duty rate of 5% on the import of plant and equipment not manufactured locally.
- (b) No levy of sales tax on such plant, machinery and equipment, as the same will be used in production of taxable electricity.
- (c) Exemption is already available from income tax including turnover rate tax and with-holding tax on imports.
- (d) Repatriation of equity along with dividends is freely allowed, subject to the prescribed rules and regulations.
- (e) Parties may raise local and foreign finance in accordance with regulations applicable to industry in general. GOP approval may be required in accordance with such regulations.
- (f) Maximum indigenization shall be promoted in accordance with GOP policy.
- (g) Muslims and Non-residents shall be exempted from payment of Zakat on dividends paid by the company.

The above incentives will be equally applicable to private, public-private and public sector projects.

8.3 SECURITY PACKAGE

The security package for projects above 50 NRV, provides the following salient features:

- (a) Model IA, PPA, FSA, GSA, CSA and WUL (as applicable), have been prepared for private/public-private partnership power projects to eliminate the need for protected negotiations.
- (b) The GOP will:
 - (i) Guarantee the contractual obligations of its entities, namely WAPDA/KESC, etc. and Provincial/AJK governments, even though some or all of the utilities may be privatized during the term of various agreements.
 - (ii) Provide protection against specified "political" risks.
 - (iii) Provide protection against changes in the taxes and duties regime.
 - (iv) Ensure convertibility of Pakistan Rupees into US Dollars at the then prevailing exchange rates and the remit ability of foreign exchange to cover necessary payments related to the projects, including debt servicing and payment of dividends. Tariff components, however, will be adjusted and indexed in accordance with this Policy, against exchange rate variation, inflation, etc.

8.4 THE ENVIRONMENT

All requirements of the Pakistan Environmental Protection Agency (PEPA) Act 1997, *inter alia*, relating to environmental protection, environmental impact and social soundness assessment, shall be met.

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Appendix Documents

CONTRACTURAL

**Government of Pakistan Letter to Proceed (Award)
Sovereign Guarantee
Letter of Support
Implementation Agreement
Power Purchase Agreement**

FINANCE AND POLITICAL RISK

**US EXIM Bank - Finance
US Overseas Private Investment Corporation (OPIC) - Political Risk**

TECHNICAL

**Project Drawings
Gas Turbine Performance Data
Equipment Package A**

PROJECT TIMELINE

**Project Schedule
Scope of Services**

ENGINEERING, PROCUREMENT AND CONSTRUCTION CONTRACTOR

CANDIDATES

OPERATION AND MAINTENANCE CONTRACTOR CANDIDATES

**China National Chemical Engineering Corporation Group (CNCEC)
China National Electrical Engineering Corporation (CNEEC)
Korea Midland Power (KOMIPO)
Wood Group**

PAKISTAN ELECTRICAL DEMAND AND ORGANIZATION

**Demand Projections
Pakistan Government Power Generation Organizations**

- *End of Information Memorandum* -

