

800 Megawatt Power Plant  
Karachi, Pakistan



**Cavalier Energy**  
CORPORATION



# Cavalier Energy CORPORATION

## 800 Megawatt Independent Power Plant – Karachi, Pakistan

38%+ IRR at 60% off-take - Sovereign Guarantees

US Government insured Assets, Equity, and Returns on Investment

<b>Project</b>	800 Megawatt Fast Track Independent Power Plant Karachi, Pakistan LNG/Natural Gas fueled		<b>Political Risk Insurance</b>	Overseas Private Investment Corporation (US Government) and Private reinsurance. Registered.	
	US\$ Million		<b>ECA Status</b>	US EXIM – Registered	
<b>Project Cost</b>	Construction	1,068.28	<b>Engineering Procurement Construction Contractor (EPC)</b>	General Electric approved contractor General Electric supervision General Electric commissioning General Electric operations General Electric management 800 EPC personnel are mobilized at adjacent sites building power plants	
	Const. Interest	50.79	<b>Post COD Parameters</b>	O&M	US\$ 43.62 M/yr
	<u>Working Capital</u>	<u>98.00</u>		Insurance	US\$ 8.37 M/yr
	Total	1,217.07		Fuel pass through	100% + fees
<b>Project Financing</b>	77.22% Debt	847.50	<b>Power Plant</b>	US manufactured General Electric Combined Cycle Gas Turbines 209FA	
	22.78% Equity	220.78	<b>Guaranteed Heat Rate</b>	Open Cycle LPG	11,005Kj/kWh
<b>Financial Parameters in Tariff</b>	IRR - 60% off take	38%+		Combined Cycle	7,542Kj/kWh
	Islamic Bond sukuk	15.50%	<b>Security Package</b>	Equipment – General Electric EPC Contract – US lead Consortium O&M Contract – General Electric Land Agreement Power Purchase Agreement Implementation Agreement Sovereign Guarantees Political Risk Insurance - OPIC Fuel Supply Agreement Bank Guarantee – US EXIM Bank	
	Cost per MW	US\$ 1204	<b>Off take</b>	Pakistan National Electrical Power Regulatory Authority (NEPRA) <a href="http://www.nepra.gov.pk">www.nepra.gov.pk</a>	
<b>Total Tariff</b>	7.0047 US Cents/kWh – Gas est. 9.7692 US Cents/kWh – LNG		<b>Timeline</b>	Financial close 4 mo. 480 MW Simple Cycle 18 mo. 800 MW Combined Cycle 30 mo.	
<b>Sponsors</b>	Cavalier Energy and Development Group – Pakistan (major Pakistan Defense Contractor – 4 Major Pakistan Power Plant Projects) <a href="http://www.cedsg.com">www.cedsg.com</a>		<b>Contact</b>	Rod Johnson President & CEO <b>+1 214 679-8600 US mobile</b> +1 972 261-2000 Direct	
	Global Edison Corporation – US. 3 Power Plants currently under contract in Afghanistan & Pakistan. <a href="http://www.GlobalEdison.com">www.GlobalEdison.com</a>				



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**Confidential Update for Investors and Lenders**  
**800 Megawatt Independent Power Plant – Karachi, Pakistan**

Project Update – October 5, 2009

**2009 has seen many changes in the Global Economy and the Project Sponsors and Pakistan Ministry of Water and Power have responded by revamping the project to provide higher returns with increased financial security and lower operational costs.**

**Specifically:**

- **New Fuel (LNG)** -The project has been redesigned to operate on LNG fuel using more efficient technologies that will provide lower cost electricity to the consumer, lower emissions, allow the project to stand higher costs of capital and greater security of fuel availability from more sources.
- **New Project Timeline** - Financial close and Commercial Operation Date will be adjusted to reflect project re-engineering and moderately longer financing requirements.
- **New Financial Sources** - The project will now be financed in part by high yield Islamic Bonds, which have largely been unaffected by the economic down.

**Project Unique Features:**

- **Pakistan's first LNG Power Plant** will use clean low cost fuel not available to other projects.
- **Pakistan's first LNG Terminal** will be come the gateway to supply LNG to Pakistan
- Pakistan's first Islamic Bond funded power plant accessing large untapped capital sources.
- **Full Political Risk Insurance** from the United States Overseas Private Investment Corporation.
- **38% plus IRR on Equity** at only 60% off take backed by Sovereign Guarantees
- **Sovereign Guarantees** from the Government of Pakistan further insured by the US Government
- **Full Political Risk Insurance** from the US government (Overseas Private Investment Corporation)

**While many projects have been negatively impacted our project has seen numerous improvements**

- LNG fuel will allow a **lower cost of operation** and **lower cost electricity**. Regassification of the LNG will occur offshore on board the LNG tanker removing most fuel over 4.5 miles from the project and making it **more secure**. **Capital costs and risk of fuel storage are now born by suppliers**.
- **New high efficiency Gas Turbine Generators** previously in short supply with long lead times are now available providing a higher output at a lower cost.
- The **revised project timeline** resulting from re-engineering will allow for issue of the Islamic Bonds.
- LNG Fuel prices have plummeted which will now allow for **low cost long term fuel purchase** assuring the project will be operated at maximum utilization and therefore produce higher returns.
- Demand for LNG in Pakistan has brought forth **new project sponsors with land, and existing fuel jetty to be contributed to the project** and the new sponsor will be a major consumer of LNG.



## **Security Package – World Bank Standards**

### **Index and Status**

#### **Risk Matrix – World Bank Standard**

1. Implementation Agreement – Agreed as part of fast track bid package
2. Power Purchase Agreement – Agreed as part of bid package (under revision for LNG)
3. Tariff – Approved by the Government Agencies (under revision for LNG)
4. Engineering, Procurement and Construction – Agreed (under revision for LNG)
5. Operation and Maintenance Contract. – Agreed. (under revision for LNG)
6. Sovereign Guarantee – Agreed as part of the fast track bid package
7. Political Risk Insurance – US Overseas Private Investment Corporation.- Agreed (Draft)
8. Land Agreement and Fuel Jetty Agreement– Agreed
9. Fuel Supply Agreement – Agreed. A direct contract with a national supplier is being negotiated.

### **Project Participants:**

**Gas Turbine Generators – General Electric (US)**

**Engineering Procurement and Construction – General Electric approved US Contractor - TBD**

**Accounting, Financial Model Audit and Feasibility Study – Deloitte LLP (New York)**

**Legal - Locke Lord Bissell & Liddell (Dallas, Texas)**

**Pakistan Sponsor (Development) - Cavalier Energy Systems – major Pakistan government contractor.**

**Pakistan Sponsor (Land, Fuel Jetty) - ENRGO VOPAK – Currently operating gas turbine power plant at the site and operating a LPG gas fuel jetty.**

**US Project Sponsor (Finance, Risk Management and Project Development) - Global Edison Corporation**

**Political Risk Insurance and Reinsurance – Overseas Private Investment Corporation (US)**

**Export Credit Agency – US EXIM Bank**

For further information contact

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## 800 Megawatt Independent Power Plant Karachi, Pakistan

Note: This Risk Mitigation Analysis has been completed based on World Bank Standards and Guidelines and the best available information at the time. No representations, warranties or guarantees are made as to the accuracy or completeness of the data contained herein. No solicitation is being made based on the data. Potential Investors or Lenders are advised to refer to actual contract documents and their own respective counsel for all matters concerning the risks and benefits of the project.

### RISK MATRIX

RISK MITIGATION ANALYSIS				
RISK	REASON	REMEDY	CONSEQUENCES FOR LENDERS	CONSEQUENCES FOR INVESTORS
<b>CONSTRUCTION PERIOD</b>				
Cost Overrun	Within Construction Consortium Control	Included in Fixed Price Lump Sum Contract.	No Effect	No Effect
	Outside Construction Consortium Control:			
	-Insured event	Proceeds of insurance policy including business interruption insurance.	No Effect to Minimal Effect. One Percent Policy Deductible is within Contingency. Draw on standby finance if insurance policy exhausted. Debt cover factors reduced if standby debt used.	No Effect to Minimal Effect. Return eroded by servicing of stand-by finance if policy limits exceeded.
	- Uninsured force majeure (Example: Disease/Plague, etc)	Draw on stand-by finance.	Debt cover factors reduced if stand-by debt used	Return eroded by servicing of stand-by finance
	- Ground conditions	EPC Contract warrants condition and design appropriateness.	No Effect.	No Effect.



**RISK MITIGATION ANALYSIS**

<b>RISK</b>	<b>REASON</b>	<b>REMEDY</b>	<b>CONSEQUENCES FOR LENDERS</b>	<b>CONSEQUENCES FOR INVESTORS</b>
	- Owner variation orders	Not permitted without Lender and Investor Approval. If approved and in excess of contingency draw on stand-by finance. Term sheet limits scope of variations by Owner.	No Effect to Minimal Effect.  Debt cover factors reduced if stand-by debt used in excess of project contingencies.	No Effect to Minimal Effect.  Return eroded by servicing of stand-by finance if stand-by debt used in excess of project contingencies.
	- Changes of law, delays in obtaining approvals or permits, increased taxes	Power Purchase Agreement Adjusts Tariff to compensate. IRR is guaranteed under PPA.	No Effect	No Effect.
Delay in Completion	Within Construction Consortium Control	Costs are a pass through to EPC under contract.	No Effect.	No Effect.
	Insured Force Majeure	Proceeds from business interruption insurance policy.	No Effect to Minimal Effect. Standby finance drawn if insurance policy exhausted; debt cover factors reduced if standby debt finance used.	No Effect to Minimal Effect. To extent ability to pay dividends is postponed, return eroded.
	- Ground conditions	EPC Contract warrants condition and design appropriateness.	No Effect.	No Effect.
Failure of Plant to meet Performance Specifications at Completion Tests as result of fault by Construction Consortium	Capacity shortfall	Penalties payable by Construction Consortium up to full value of contract supplemented by E&O insurance. Remediation corrects construction errors causing Capacity Shortfall.	No effect	No Effect based on remediation. Return reduced if penalties and EPC Insurance from Construction Consortium exhausted. Capacity Payment Adjusted per PPA.
	Heat Rate shortfalls	Penalties payable by Construction Consortium up to full value of contract supplemented by E&O insurance.	No Effect based on remediation. Debt cover factors reduced otherwise. If Construction Consortium fails to	No Effect based on remediation. Otherwise return reduced by cost of additional fuel if exceeds fuel contingency.



<b>RISK MITIGATION ANALYSIS</b>				
<b>RISK</b>	<b>REASON</b>	<b>REMEDY</b>	<b>CONSEQUENCES FOR LENDERS</b>	<b>CONSEQUENCES FOR INVESTORS</b>
		Remediation corrects construction errors causing Heat Rate Shortfall.	remedy defect, credit risk on Construction Consortium.	
Operating Costs Overrun	Costs exceed original estimates, not insurance or Force Majeure event	O&M contract warrants costs.	No Effect.	No Effect.
	Insurance costs exceed original estimates	Long Term 10 year contract protects investors and lenders during 10 year loan. Standby finance drawn pending Tariff adjustment.	No Effect. Debt cover factors slightly reduced depending on timing effect.	No Effect
Increased Financing Costs	Interest rate increase	Fixed interest rate for 10 year term.	No effect.	No Effect
	Adverse exchange rate change	Pass through to Government under PPA.	No Effect.	No Effect.
	Adverse exchange in terms of finance	Pass through to Government under PPA.	No Effect.	No Effect
Government	Minor changes in tax, law, customs, legal requirements, environmental standards	Pass through to Government under PPA. Tariff adjustment (if during construction period, standby finance drawn).	No Effect. Stand-by finance could be required. No effect on Debt Service Cover Factor.	No Effect.
	Expropriation, nationalization, consents withdrawn, interference causing severe prejudice	Political Risk Insurance responds. Owner entitled to terminate as Government default	No Effect.	No Effect. Termination would reduce returns per PPA.
	Fundamental breach by the Government, under agreements	Political Risk Insurance responds. Owner entitled to terminate as Government default.	No Effect. If owner terminates, loan repaid or assumed as Compensation.	If Government defaults and Owner terminates, Compensation paid for termination. Termination would reduce returns per PPA. Political Risk Insurance responds.



<b>RISK MITIGATION ANALYSIS</b>				
<b>RISK</b>	<b>REASON</b>	<b>REMEDY</b>	<b>CONSEQUENCES FOR LENDERS</b>	<b>CONSEQUENCES FOR INVESTORS</b>
<b>OPERATION PERIOD</b>				
Operating Costs Overrun	As a result of changes in regulations	Tariff adjustment	No effect	No effect
	At Owner's request and beyond contingencies. (examples: increased or new security measures or new maintenance procedures to improve heat rates.)	No adjustment to Tariff.	No effect based on offsetting benefits. Debt cover factors reduced if no offsetting benefit.	No effect based on offsetting benefits. Returns reduced if no offsetting benefit.
	As result of failure by the operator	No adjustment to Tariff. Penalties payable by the operator	No Effect or Minimal Effect. Debt cover factors reduced if penalties exhausted	No Effect or Minimal Effect. Return reduced if penalties exhausted.
Inflation, Adverse Change in Cost of Finance, Exchange or Interest Rate Rates		Tariff adjusted by indices. Small possibility that movements in indices do not exactly match changes in actual costs.	No Effect or Minimal Effect. Debt cover factors could be reduced/increased based on timing.	No effect or Minimal Effect. Possibility of erosion/increase in return
Foreign Exchange Non-Availability/ Non-Convertibility		Political Risk Insurance responds. Government guarantees availability of foreign exchange. If Government defaults Owner can terminate.	No Effect.	No Effect.
Failure to Make Available Sufficient Foreign Exchange	Government default	Political Risk Insurance responds. Government guarantees availability of foreign exchange. If Government defaults Owner can terminate.	No Effect or If Owner terminates, loan is repaid or assumed as Compensation	No Effect or Compensation paid for termination.





<b>RISK MITIGATION ANALYSIS</b>				
<b>RISK</b>	<b>REASON</b>	<b>REMEDY</b>	<b>CONSEQUENCES FOR LENDERS</b>	<b>CONSEQUENCES FOR INVESTORS</b>
Failure of purchaser of power (State owned utility) to Perform Obligations		Political Risk Insurance responds. Government guarantees performance. If defaults under guarantee, Owner can terminate.	No effect if Government pays under guarantee. If Government defaults under guarantee and Owner terminates, loan repaid or assumed as Compensation.	No effect based on Political Risk Insurance and/or if Government pays under guarantee. If Government defaults under guarantee and Owner terminates, Compensation paid to termination.
Forced Outage, De-Rate or Temporary Shortfall in Capacity, Deterioration in Heat Rate	Owner's fault	O&M contractor warranties performance. Penalties payable by Owner and Capacity Payment reduced per PPA.	No Effect based on recovery from O&M contractor. If O&M warranty fails to repay penalties it may completely erode shareholders returns, possibility of insufficient cash. Debt service Escrow Account to be drawn down.	Any penalty not paid by O&M contractor will erode return for investors.
Forced Outage or Temporary Shortfall in Capacity	Purchaser of electricity's fault	Capacity Purchase Price payable anyway.	No effect	No effect
	Force majeure event	Political Risk Insurance Responds. Capacity Purchase Price paid by Government anyway.	No Effect. Government guarantees default by Purchaser. If Government defaults, Owner terminates and loan repaid or assumed as Compensation	No Effect. If Government defaults, Owner can terminate. Compensation for termination paid by Government
Increased Fuel Costs (not arising from higher Heat Rate deterioration than Base Case)	Increase in price of Fuel.	All fuel cost are passed through to Government.	No Effect.	No Effect.

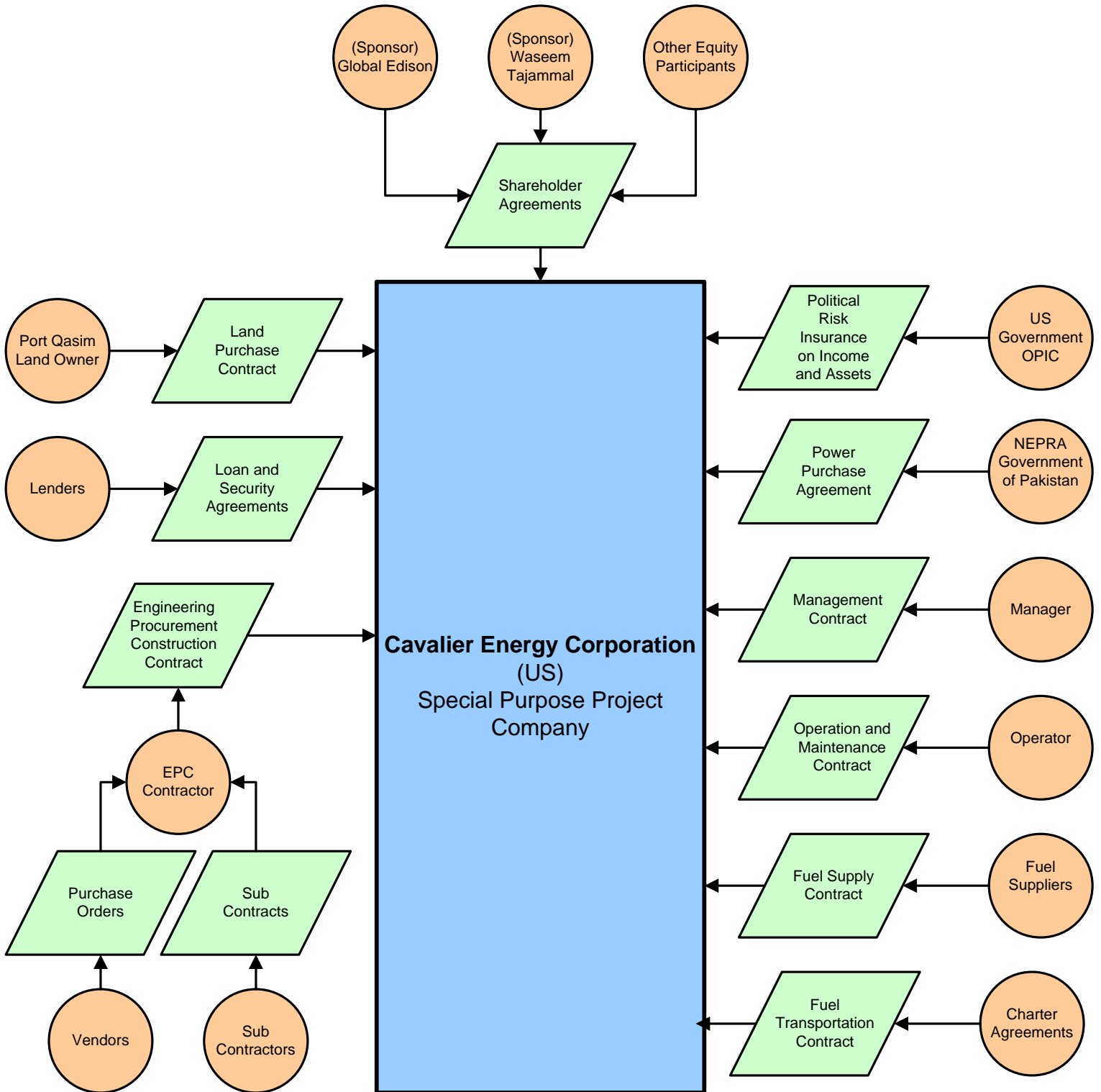


<b>RISK MITIGATION ANALYSIS</b>				
<b>RISK</b>	<b>REASON</b>	<b>REMEDY</b>	<b>CONSEQUENCES FOR LENDERS</b>	<b>CONSEQUENCES FOR INVESTORS</b>
Boiler and Machinery Failure	Insured event	Insurance proceeds for physical reinstatement and business interruption cover for debt service costs.	No effect unless insurance policy exhausted and standby debt finance used	No Effect or Reduction in return if insurance policy exhausted
Failure of the Operator to Perform Obligations	The Operator's breach of Operations and Maintenance Agreement	Penalties payable by the Operator.	No Effect or Debt cover factors reduced if the Operator's penalties exhausted and standby debt finance used.	No Effect or Debt cover factors reduced if the Operator's penalties exhausted and standby debt finance used
Environmental Incidents Caused by the Operator	The Operator's breach of Operations and Maintenance Agreement	Indemnity from the Operator.	No Effect or Debt cover factors reduced if the Operator's penalties exhausted and standby debt finance used.	No Effect or Debt cover factors reduced if the Operator's penalties exhausted and standby debt finance used

# Project Structure

## 800 Megawatt Independent Power Plant

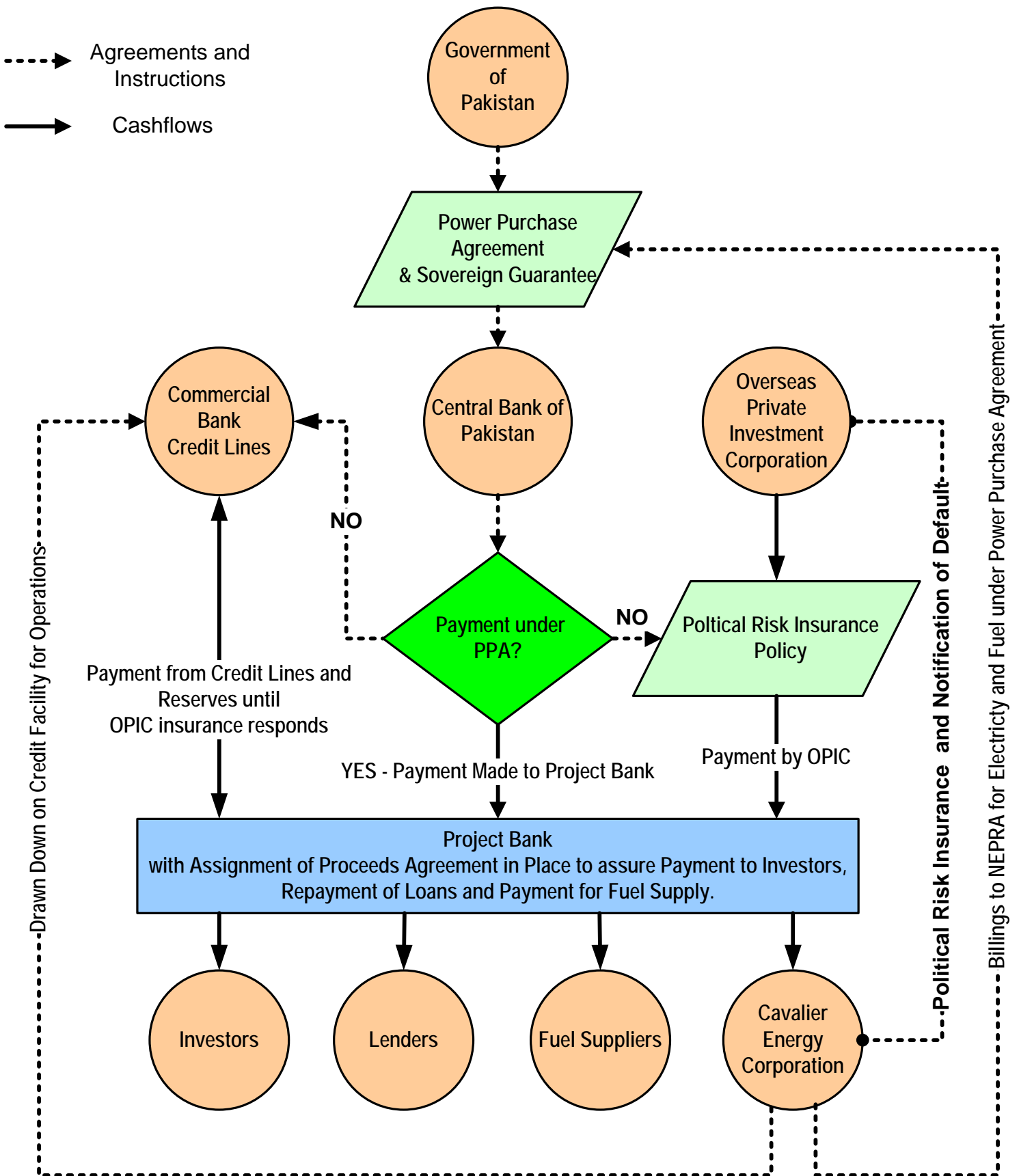
Karachi, Pakistan



# Lender and Investor Security for Cashflows

## 800 Megawatt Independent Power Plant

Karachi, Pakistan



Drawn Down on Credit Facility for Operations

Political Risk Insurance and Notification of Default

Billings to NEPRA for Electricity and Fuel under Power Purchase Agreement