

**BEFORE THE NATIONAL ELECTRIC  
POWER REGULATORY AUTHORITY**

**PETITION FOR TARIFF DETERMINATION**

**ON BEHALF OF**

**ATLAS POWER LIMITED**

**FOR A POWER PROJECT OF APPROXIMATELY 225 MW**

**ON**

**LAHORE SHEIKHUPURA ROAD, DISTRICT SHEIKHUPURA  
NEAR LAHORE**

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**January 15, 2007**

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## A. Glossary

<b>Atlas Power</b>	<b>Atlas Power Limited</b>
<b>CEO</b>	<b>Chief Executive Officer</b>
<b>CPI</b>	<b>Consumer Price Index</b>
<b>CPP</b>	<b>Capacity Purchase Price</b>
<b>CPPA</b>	<b>Central Power Purchasing Agency of NTDC</b>
<b>EPC</b>	<b>Engineering Procurement and Construction</b>
<b>EPR</b>	<b>Energy Purchase Risk</b>
<b>FSA</b>	<b>Fuel Supply Agreement</b>
<b>IA</b>	<b>Implementation Agreement</b>
<b>IMF</b>	<b>International Monetary Fund</b>
<b>IPP</b>	<b>Independent Power Producer</b>
<b>IRR</b>	<b>Internal Rate of Return</b>
<b>ISO</b>	<b>International Standards Organization</b>
<b>KIBOR</b>	<b>Karachi Inter Bank Offered Rate</b>
<b>KV</b>	<b>Kilovolt</b>
<b>kW</b>	<b>Kilowatt</b>
<b>kWh</b>	<b>Kilowatt Per Hour</b>
<b>L/C</b>	<b>Letter of Credit</b>
<b>LFO</b>	<b>Light Fuel Oil (High Speed Diesel)</b>
<b>LHV</b>	<b>Lower Heating Value</b>
<b>LIBOR</b>	<b>London Inter Bank Offered Rate</b>
<b>LOI</b>	<b>Letter of Interest</b>
<b>LOS</b>	<b>Letter of Support</b>
<b>MW</b>	<b>Megawatt</b>
<b>MWh</b>	<b>Megawatt per hour</b>
<b>NEPRA</b>	<b>National Electric Power Regulatory Authority</b>
<b>NTDC</b>	<b>National Transmission and Dispatch Company Limited</b>
<b>O&amp;M</b>	<b>Operation and Maintenance</b>
<b>OMC</b>	<b>Oil Marketing Company</b>
<b>Pak. Rs.</b>	<b>Pakistani Rupees</b>
<b>POE</b>	<b>Panel of Experts of PPIB</b>
<b>PPA</b>	<b>Power Purchase Agreement</b>
<b>PPIB</b>	<b>The Private Power &amp; Infrastructure Board</b>
<b>Project</b>	<b>Atlas Power's proposed independent power project of approximately 225 MW capacity based on reciprocating engine single fuel RFO fired technology on Lahore-Sheikhupura Road, District Sheikhupura near Lahore in the Punjab province</b>
<b>RFO</b>	<b>Residual Fuel Oil</b>
<b>ROE</b>	<b>Return on Equity</b>
<b>Ton</b>	<b>Metric Tonne i.e. 1000 kg</b>
<b>USD</b>	<b>United State Dollars</b>
<b>WAPDA</b>	<b>Water And Power Development Authority</b>

## **B. Introductory Remarks:**

- This Tariff Petition is being filed before NEPRA pursuant to Rule 3 of the NEPRA (Tariff Standards and Procedure) Rules, 1998, read with paragraph 1.3 of Guidelines for Determination of Tariff for Independent Power Producers issued by the Government of Pakistan in November 2005 and the applicable provisions of the Government of Pakistan's Policy for Power Generation Projects, 2002 (the "**2002 Power Policy**").
- Atlas Group, the principal sponsor of Atlas Power, submitted a proposal to the PPIB on October 19, 2005, for the installation of an approximately 225 MW capacity power generation plant on Lahore-Sheikhupura Road, District Sheikhupura, near Lahore in the Punjab province (the "**Project**") in terms of the 2002 Power Policy. In this context, Atlas Power, which is filing this Tariff Petition, was incorporated as a public limited company under the Companies Ordinance, 1984, on January 5, 2007.
- On December 29, 2005 the PPIB issued a permission letter to Atlas Group in respect of the completion of the Project on a fast track basis, thereby dispensing with the steps of pre-qualification, submission of feasibility studies and issuance of Letter of Interest.
- The financial package for the Project is based on a standard debt and equity ratio comprised of seventy five percent (75%) debt and twenty five percent (25%) equity. This financial structure is allowed under the Infrastructure Project Guidelines issued by State Bank of Pakistan and the Guidelines for Determination of Tariff for Independent Power Producers issued by the Government of Pakistan in November 2005.
- In case NEPRA requires any further information, clarification or explanation from Atlas Power during its evaluation process, Atlas Power would be pleased to provide it as quickly as possible.

## C. Particulars of Petition:

### 1. DETAILS OF THE PETITIONER

#### Name and Registered Office

Atlas Power Limited  
2nd Floor, Federation House,  
Shahrae Firdousi, Clifton,  
Karachi  
Telephone: (021) 111-745-745  
Facsimile: (021) 587-9713, 587-9693

Representatives of Atlas Power Limited

- i. Mr. Saquib H. Shirazi Director
- ii. Mr. Maqsood Ahmed Basraa Director

### 2. BACKGROUND

- 2.1 Under the Regulation of Generation, Transmission and Distribution of Electric Power Act (Act No. XL) of 1997 (the “NEPRA Act”), NEPRA is the authority *inter alia* competent to determine tariffs and other terms and conditions for the supply of electricity through generation, transmission and distribution. NEPRA is also the competent authority for determining the process and procedures for reviewing tariffs and recommending tariff adjustments.
- 2.2 Atlas Power is a public limited company incorporated and existing under the Companies Ordinance, 1984.
- 2.3 In accordance with the requirements of the NEPRA Act and the rules and regulations made thereunder, Atlas Power hereby submits this Petition under the NEPRA (Tariff Standards and Procedure) Rules 1998, for tariff determination in respect of its power generation facility situated on Lahore-Sheikhupura Road, District Sheikhupura, near Lahore in the Punjab province.

### 3. INTRODUCTION

- 3.1 On December 29, 2005 the PPIB issued a permission letter to the Atlas Group in respect of the completion of the Project on a fast track basis, thereby dispensing with the steps of pre-qualification, submission of feasibility studies and issuance of Letter of Interest.
- 3.2 Hence, this Tariff Petition is now submitted in accordance with the provisions of the NEPRA Act and Rule 3 of the NEPRA (Tariff Standards and Procedure) Rules, 1998, read with paragraph 1.3 of Guidelines for Determination of Tariff for Independent Power Producers issued by the Government of Pakistan in November 2005 and the applicable provisions of the 2002 Power Policy. It is therefore requested that this Tariff Petition may kindly be processed accordingly. Atlas Power undertakes to apply to NEPRA for the grant of a generation licence through a separate application as soon as practically possible after the instant submission.

- 3.3 The tariff agreement will be finalized among the parties, *i.e.* Atlas Power and NTDC, subject to NEPRA’s approval of a 25 year tariff acceptable to Atlas Power. It will be a two-part tariff, comprising capacity and energy charges. This tariff will be integrated into the Power Purchase Agreement (the “PPA”) to be entered into between Atlas Power and NTDC, and shall be based on the format of the standardized PPA proposed by the PPIB. We respectfully request NEPRA to kindly ensure consistency between the adjustment formulae and indexations to be applied to the referenced tariff normally conveyed to the Petitioner in NEPRA’s tariff determination order since these formulae and indexation also form part of Schedule 1 to the PPA. Consistency must therefore be maintained between NEPRA’s tariff determination order and Schedule 1 to the PPA.
- 3.4 Additional information, if any, shall be submitted by Atlas Power, as and when required by NEPRA.

3.5 **Investment**

The investment cost estimate of the Project is presented below in US dollars (“US\$”). The Engineering, Procurement and Construction (“EPC”) price is fixed at Euros 149.5 m (approximately 666 Euros/kW) and, converted at the reference exchange rate of 1.20 US\$/Euro, this price will be US\$ 179.4 m (799 US\$/kW). At this time we have assumed total EPC cost in foreign exchange.

	<b>Project Costs</b>	<b>US\$ in m</b>
1	EPC	179.40
2	Taxes & Duties	8.97
3	Emergency spare parts	2.69
4	Mobilization	3.30
5	Land purchase, fees and infrastructure	3.00
6	Development	3.50
7	Insurance	2.42
8	Non EPC Construction	3.20
9	Admin & Utilities	2.30
10	Financing Fees & Charges	4.50
11	Interest During Construction (IDC)	14.98
	<b>Total Project Cost</b>	<b>228.26</b>

3.6 **Itemized Explanation of Investment**

- 3.6.1 “EPC” covers power generation sets together with all the necessary auxiliary machinery, equipment and systems including the erection and commissioning of the equipment and construction of buildings. Our stated EPC cost includes cost of the fuel tank for 30 days of RFO storage along with fuel loading, fuel unloading pumping system with all heating and piping’s as well as the fire containment area. This turnkey price of the power plant is based on a firm proposal but based on the above referenced exchange rate.

- 3.6.2 “Taxes & Duties” covers all import taxes and duties as per the 2002 Power Policy said to be 5% of EPC cost.
- 3.6.3 “Emergency spare parts” covers the costs of standard lot of spare parts aimed to reduce as much as possible the stop times for maintenance of the plant, *i.e.* instead of taking a component out and testing it, exchanging and replacing the component so that the removed component is tested and used as a spare for the next checking time. These are estimated at 1.5% of EPC costs.
- 3.6.4 “Mobilization” covers the expenses of Atlas Power and O&M Contractor personnel, *i.e.* hiring local personnel for operation and maintenance, training at manufacturer’s factory on diesel engine and auxiliaries, etc. costs of trips and courses, selection of an expatriate to carry out the operation and management.
- 3.6.5 “Land purchase, fees and infrastructure” covers the purchase of land, together with stamp duty and registration fees, the fees of the broker and the lawyers, as well as the cost of fill to levelize the site with the access road, and construction of the boundary wall.
- 3.6.6 “Development” includes sponsors’ development costs and delay in start-up insurance. These include costs of Feasibilities Studies, Environmental studies, Geological and Hydrological studies, Soil Investigation, and load flow and short circuit assessments, fees of engineering consultants, lawyers in Pakistan as well as from abroad, Fees for technical consultants, guarantees furnished to PPIB and fees paid to NEPRA etc.
- 3.6.7 “Insurance” covers the costs during construction of the insurance of the assets, incurred prior to the Commercial Operations Date (the “COD”). This is estimated at 1.35% of EPC costs.
- 3.6.8 “Non EPC Construction” covers the cost of items which have been excluded by EPC contractor and have to be borne by the Project Sponsors. It mainly include Admin & Office Buildings, Residential Colonies and Procurement of telecommunication system, Power & Water Connections, SCADA, Whether Station and other operational, office and electric equipments.
- 3.6.9 “Admin & Utilities” includes the cost of annual staff costs, utilities during construction, cost of Independent Engineer and other administrative expenses.
- 3.6.10 “Financing Fees & Charges” includes the up-front fee, commitment fee, lenders’ consultants fee, L/C charges etc. It is assumed that local funding would be available for the project, in case of foreign funding additional financing cost will be considered as pass through.

3.6.11 “Interest During Construction” is calculated on the basis of anticipated interest rates, equity injections, and the construction payment schedule. It may kindly be noted that Atlas Power’s tentative COD is based on a period of 20 months corresponding to March 31, 2009. However, due to acute shortage of Power Engines around the world, the expected COD may be further delayed until the confirmation of delivery schedule from machinery supplier.

### 3.7 **Financial Analysis**

The financial calculations for the Project are based on the:

- (a) Investment cost estimate, including a firm turnkey price.
- (b) Power plant operating costs (including long-term O&M contract and life-time heat rate).
- (c) Financing, taxation, depreciation and other obligations and terms regulated by the law or lending institutions.
- (d) Proposed 25-year tariff, based on real life-time costs. Atlas Power’s model is based upon the BOO or Build-Own-Operate concept.
- (e) Assumption that the Project will qualify for tax incentives as per the 2002 Power Policy, including an exemption from corporate income taxes as well as turnover and withholding tax on imports.

### 3.8 **Capital Structure**

The capital structure of the Project is as follows:

<u>US\$ in Million</u>	
Equity	57.06
Total debt	171.20
Total Project Cost	228.26
Debt Equity Ratio	75:25

### 3.9 **Other Considerations**

3.9.1 The Project would offer significant relief locally in the transmission system of Lahore, as it would bypass long transmission lines and potential step-down transformer bottlenecks. There is currently no significant power generation inside this area. The plant generation would be consumed very close to the generation site, thus also reducing substantial transmission losses. The Project could be finalized and commissioned on a fast-track basis within 20 months as a power generation plant based on reciprocating engine single fuel RFO fired technology.

- 3.9.2 A range of technologies was reviewed to utilize RFO: conventional steam plant, gas turbines and diesel engines, either in single cycle or combined cycle modes, as well as 4-stroke or 2-stroke engine configurations. Four-stroke diesel engines were selected, as the primary objective of the plant is to convert the RFO into electrical energy. Engines are well proven to use this type of fuel. Gas turbine based concepts were rejected due to constraint of gas availability to the power sector.
- 3.9.3 After thorough examination of all available technologies and engine manufacturers, it became clear that the plant configuration discussed hereinafter would offer the best and most economical performance for Atlas Power. The proposed plant concept is based on a 224.35 MW (ISO) power plant single fuel RFO diesel engines in combined cycle. The main components of the plant are eleven proven engine generators sets of type 18V48/60 manufactured by MAN Diesel SE of Germany and eleven heat recovery steam generators (HRSG) to provide steam to one condensing steam turbine and for in-house use. When all the engines and the steam turbine run in parallel, the plant will generate a net output of 213.60 MW.

Note: Atlas Power's indicated net output of 213.60 MW is to be considered the reference net output for purposes of capacity charge calculations and adjustment formulas, accepting, however, that net contracted capacity will be established after IDC tests.

- 3.9.4 Based on the requirement of the Project for full load factor, RFO and needed LFO will be transported to the site.

The RFO shall be stored in three storage tanks within the plant with combined capacity of over 30,000 tons. This storage capacity is dimensioned for 30 days of full power operation of all the engines. The RFO from the storage tanks will be transferred into the buffer tank, and then moved to the day tank which has a capacity equal to at least 16 hours of full power operation of all the engines. Diesel oil shall be stored in one Diesel oil tank.

There is a need for transportation of RFO, Lube Oil and Diesel for plant operation and maintenance. In Pakistan, there are several operational OMCs that are capable of supplying these fuel products. For the purpose of this study, the following companies were considered as potential suppliers:

Pakistan State Oil  
SHELL Pakistan  
TOTAL (PARCO)

Although Pakistan Railways can carry out the transportation of equipment and fuel, however, truck/lorries are the most suitable means of transportation of all fuels to the plant. All the roads are wide and metalled to support fuel supplies on regular day to day basis. The Lahore-Sheikhupura Road is four lane carpeted roads that support all kind of heavy loads. The motorway is three lanes one way carpeted road and can support all kinds of loads for fuel or machinery transportation. The Lahore-Multan segment of the G.T. Road is four lane carpeted road and suitable for all kind of traffic.

- 3.9.5 The strategic location of the Project provides a unique opportunity for interconnection for power dispersal at Attabad grid-station. No right of way issues are expected, *i.e.* the line can be built within the same time schedule as the Project itself.

#### 4. **TARIFF SUMMARY**

- 4.1 The proposed tariff figures appended hereinbelow are the result of a detailed financial analysis. Technical, economical, financial, legal and fiscal aspects have been considered in the evaluation of Atlas Power's financial performance. The financial analysis is based on a notional 60% load factor as per the PPIB's instructions, and a 25-year PPA.
- 4.2 Based on the RFO price of Pak Rs. 22,140 per M.Ton. (RFO Price excluding transportation), output of 213.60 MW (net at site conditions) and detailed financial analysis, the following tariff has been established.

	Capacity Charge US Cents/kWh	Energy Charge US Cents/kWh	Total tariff US Cents/kWh	Total tariff Pak Rs. /kWh
<b>Levelized tariff</b>	3.8890	8.1107	11.9997	7.1998
<b>Average tariff</b>	3.1148	8.1107	11.2255	6.7353

Average (1-10 years) :	US cents 12.9028 /kWh (or Pak Rs.7.7417 /kWh)
Average (11-25 years) :	US cents 10.1073 /kWh (or Pak Rs.6.0644 /kWh)
Average (1-25 years) :	US cents 11.2255 /kWh (or Pak Rs.6.7353 /kWh)
Levelized (1-25 years) :	US cents 11.9997 /kWh (or Pak Rs.7.1998 /kWh)

## 5. ENERGY CHARGES

- 5.1 The tariff has a typical two-part structure with an energy charge for the energy actually dispatched and a capacity charge based on the available capacity. The energy charge is based on the actual kWh off-take, and consists of the fuel component and the variable O&M component.
- 5.2 The generation sets being proposed for the Project are advanced technology machines providing high thermal efficiencies. After factoring the impact of fuel cleaning, average plant aging, and a notional 60% plant load factor, this translates to approximately 45% net site efficiency, running on RFO.
- 5.3 A summary of the energy price is provided in the table below:

Period	Energy Purchase Price (EPP) Pak Rs./kWh			Total
	Fuel	Variable O&M (Foreign)	Variable O&M (Local)	
Years 1–25	4.3624	0.4300	0.0740	4.8664

### 5.4 Fuel Component

This component represents the fuel consumption at a guaranteed efficiency level for the plant based on a notional 60% capacity factor. Consequently, this tariff subsumes the efficiency risk being borne by Atlas Power. The main assumptions used to derive this price are:

(a)	RFO Price:	Rs. 22,140 per ton excluding transport.
(b)	Thermal efficiency net:	47% (at site conditions)
(c)	Thermal efficiency, inclusive of ageing and cleaning:	45% (life-cycle net at site conditions)
(d)	Output:	213.60 MW (net at site conditions)
(e)	Heat Rate:	7,584 BTU/kWh
(f)	Caloric Value	38,481 BTU/kg subject to adjustment at the time of finalization of Fuel Supply Agreement
(g)	Partial Loading:	Heat Rate Curves from generation sets manufacturers to be used for partial load heat rate calculation and payment in case the plant load falls below 40%.

### 5.5 Local Variable O&M

This component includes the cost of lubricant consumption, which is directly related to the electricity actually generated. The cost of Lube Oil for the engines will be indexed using the cost of base oil from the Lube oil supplier while the Local variable cost will be indexed to the prevailing Pakistan Wholesale Price Index (“WPI”).

### 5.6 Foreign Variable O&M

This component primarily includes imported spare parts to be changed on normal scheduled maintenance and unscheduled maintenance. Also, it includes chemicals, as well as specialized technical services from manufacturer, during maintenance of the plant. The generation sets and associated equipment have manufacturer-recommended overhauling schedules that are based on actual running hours. The actual timing of the Major Overhaul depends on the actual dispatch provided to the plant. The labor for the Variable O&M is on Fixed O&M.

As the manufacturer is European so the spare parts will be supplied from Europe as well as the specialized technical services. Based on that, the variable O&M foreign component will be indexed to the European CPI. This tariff component will also be adjusted by variations in the US\$/Euro exchange rate through the 25 year life of the Project on an annual basis.

## 6. CAPACITY CHARGES

6.1 The capacity charge for the Project is payable on the basis of the available capacity as tested at the COD, and periodically thereafter. This payment is calculated on a Pak Rs./kWh basis of capacity and, in order to calculate a unit rate in Pak Rs./kWh, a notional 60% capacity factor has been utilized.

6.2 The key assumptions factored in the capacity charge are the total capital cost of the Project, the debt-equity ratio, the cost of funding and currency thereof, together with the exchange rate. The following are the assumptions used:

- (a) Total Project Cost: US\$ 228.26 m
- (b) Debt-Equity Ratio: 75:25
- (c) Exchange Rates: 1 US\$ = 60.0 Rupees; 1 Euro = 1.20 US\$
- (d) Funding: Debt: 75%.  
Equity: 25%.
- (e) Taxes:
  - Customs Duty at 5% on imported machinery as per 2002 Power Policy.

- Dividend Withholding Tax of 7.5%.
- Customs Duty at 10% on imported spare parts.
- 0% Corporate Tax Rate.
- 0% Minimum Turnover Tax Rate.

6.3 At the time of Financial Closing, the tariff figures shall be updated for the various base figures (e.g. fuel price, EPC, O&M and Insurance prices, adjusted by actual exchange rates compared to the Reference Exchange Rates (Pak Rs./US\$ = 60.00, Pak Rs./Euro = 72.00, and US\$/Euro = 1.20), and Interest During Construction adjusted by prevailing LIBOR and KIBOR, to arrive at the reference tariff table to be used in the PPA.

6.4 At the COD, the tariff figures will be updated on the basis of actual interest incurred during construction and variations in the Reference Exchange Rates during construction.

6.5 Any modifications or additions required by the power purchaser that are not considered in the Project shall be treated as pass-through.

6.6 The capacity charge is further broken down into two components:

6.6.1 **Escalable Capacity Payment**

6.6.1.1 This component represents all the fixed costs of the plant and the return on equity. Since there is no recovery of the original equity capital invested, the plant remains the property of Atlas Power after the 25 year contract period and may operate as a merchant plant. A summary of the charges is provided below:

	Escalable Capacity Payment (Rs./kWh)						
Period	Fixed O&M	Insurance	Cost of WC	ROEDC	ROE	Withholding Tax	Total
Years 1-25	0.1411	0.0777	0.1137	0.0742	0.2831	0.0290	0.7188

6.6.1.2 The Fixed O&M component of the escalable capacity payment represents the fixed costs of all the staff for O&M, plant administration, security, transportation, overheads, office costs, professional fees such as audit, tax and legal, as well as some other fixed operational costs such as environmental monitoring, that do not change with dispatch levels.

6.6.1.3 The Insurance component consists of all-risk insurance/re-insurance for the Project, as well as business-interruption insurance (which is a lender-stipulated requirement).

6.6.1.4 The return on equity (“**ROE**”) component includes a return on invested equity giving an internal rate of return (“**IRR**”) of 15% net after deduction of withholding tax.

The escalable component is based on the following parameters:

- (a) Equity Amount: US\$ 57.06 m (25% of total project cost).
- (b) IRR: 15% after dividend withholding tax of 7.5%
- (c) Repayment of Equity: None
- (d) Working Capital Loan and cost of working capital: A working capital loan facility is assumed in order to finance the inventory, advance for fuel supply, net accounts receivables and working capital impact of 15% sales tax. The interest rate for this working capital loan is 6 months KIBOR (10.45%) + 2% premium = 12.45% total.
- (e) Cost of Foreign Debt: 6 months LIBOR + 3% premium.
- (f) Cost of Local Debt: 6 months KIBOR (10.45%) + 3% premium.
- (g) Corporate Tax Rate: 0%
- (h) Minimum Turnover Tax: 0%
- (i) Indexation: Fixed O&M shall be indexed to the following:
  - A. European CPI (60% of component)
  - B. Pakistani WPI (40% of component)

**Insurance** shall be indexed to the following:

  - A. Pak Rs./US\$ exchange rate
  - B. U.S. inflation

**ROE** shall be indexed to the following:

  - A. Pak Rs./US\$ exchange rate
  - B. U.S. inflation/Pakistan inflation

## 6.6.2 Non-Escalable Capacity Payment

6.6.2.1 The following table provides a summary of the Non-Escalable Component:

Period	Non-Escalable Component (Rs./kWh)		
	Loan Repayment	Interest Charges	Total
Year 1	0.2819	0.7245	1.0064
Year 2	0.3218	0.6846	1.0064
Year 3	0.3673	0.6391	1.0064
Year 4	0.4192	0.5872	1.0064
Year 5	0.4785	0.5279	1.0064
Year 6	0.5462	0.4602	1.0064
Year 7	0.6235	0.3829	1.0064
Year 8	0.7116	0.2948	1.0064
Year 9	0.8123	0.1941	1.0064
Year 10	0.9272	0.0792	1.0064
Years 11–25	0.00	0.00	0.00

6.6.2.2 It is apparent that there is no charge under this category after 10 years as all the debt would be repaid by the end of the 10th year. The assumptions used in calculation of the above are:

- (a) Amount of Debt: US\$ 171.20 m (75% of total Project cost)
- (b) Term of Loan: 20 months of grace period (construction) + 10 years of quarterly equal debt service after the COD
- (c) Interest Rates: Foreign: 6 months LIBOR + 3% premium  
Local: 6 months KIBOR (10.45%) + 3% premium
- (d) Currencies: US\$ and Pak. Rs.
- (e) Indexation: In case of Foreign Funding in USD: interest component would be indexed to 6 month LIBOR rate and foreign currency exchange rate.  
In case of Local Funding in PKR: interest component would be indexed to the 6 month KIBOR rate.

## 7. ESCALATIONS AND INDEXATIONS

After the COD the tariff tables provided will be indexed to factors as described above and the Reference Exchange Rates being 72.00 Pak Rs./Euro 60.00 Pak Rs./US\$ and 1.20 US\$/Euro. On the Financial Closing date, the Reference Tariff

Table will be updated by the then-prevailing indices, exchange rates and base numbers. The details are provided hereinbelow:

### 7.1 **Inflation Factors**

The following components are subject to inflation factors:

Variable O&M – Local:	Pakistan WPI
Variable O&M – Foreign:	European CPI
Lube Oil:	Base Oil Prices (Lubricant Oil)

Escalable Capacity Payment:

Fixed O&M	60% European CPI and 40% Pakistan WPI
Insurance	U.S. CPI
ROE	U.S. CPI for the foreign component and Pakistan WPI for the local component.

### 7.2 **Currency Indexation**

The following components are subject to exchange rate indexation. The Reference Exchange Rates are 72.00 Pak Rs./Euro. 60.00 Pak Rs./US\$ and 1.20 US\$/Euro.

Variable O&M – Foreign:	Pak Rs./Euro exchange rate
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**Escalable Capacity Payment:**

Fixed O&M	60% Pak Rs./Euro exchange rate
Insurance	Pak Rs./US\$ exchange rate
ROE	Pak Rs./US\$ exchange rate

**Non-Escalable Capacity Payment**

In case of foreign loan, the Interest During Construction as well as the Non-Escalable Charges shall be adjusted according to the prevailing relevant interest rate (+ spread) and foreign currency exchange rate.

### 7.3 **Interest Rate Indexation**

The following components are subject to interest rate indexation:

**Non-Escalable Capacity Payment – Foreign Loan**

Interest Charge	6 months LIBOR
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damages for Unscheduled Outages in excess thereof, and their computation shall be in accordance with the 2006 standardized PPA.

- 8.3 Scheduled Outage periods shall be 30 Days per unit in any Year, except in any Year in which a Major Overhaul is required, in which case Scheduled Outage periods shall be 60 Days per unit for such Operation Year.
- 8.4 A constant ROE is assumed, which results in an IRR of 15% over 25 years.
- 8.5 No hedging cost has been assumed for exchange rate fluctuations during construction.
- 8.6 NTDC is assumed to be responsible for financing and constructing the interconnection to the grid.
- 8.7 All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.
- 8.8 The tariff is calculated on the basis of a notional 60% plant load factor.
- 8.9 Tolerance of +/- 3% in Dispatch is assumed during normal operation.
- 8.10 The tariff table shall be further updated at COD of the Project in order to correct the tariff according to the prevailing KIBOR and LIBOR and exchange rates (Pak Rs./US\$ and Pak Rs./Euro).
- 8.11 All fuel during plant tests after synchronization are assumed to be paid for by the Power Purchaser.
- 8.12 Working capital has been financed by a separate working capital loan, and is not included in the Project cost.
- 8.13 Project contingency/debt service/maintenance reserves are not included in tariff calculations. If required by lenders, these will be adjusted accordingly in the tariff.
- 8.14 All other assumptions not expressly stated herein are based upon the 2006 standardized PPA. Consequently any change in any such assumption may lead to change in the tariff.
- 8.15 Duties & Taxes on the import of plant & equipment have been assumed for reference purposes, any change therein would be pass through.
- 8.16 Tax on any income of the Company including sales proceeds from NTDC, General Sales Tax and all other taxes will be treated as pass through items.
- 8.17 No withholding tax on local construction services and EPC/offshore contractors have been considered in tariff calculation.
- 8.18 100% local debt is assumed. If foreign debt is procured, repayment terms shall be affected.

- 8.19 In case of simply cycle mode (including during startups or peaking operation), heat rate and efficiency will be different; accordingly energy component of tariff will be adjusted.
- 8.20 Withholding tax on dividends (currently at 7.5%) as required to be deducted under the Income Tax Ordinance, 2001 or any other law for the time being in force at the time of such payment is considered as pass through.
- 8.21 No working capital for bridge financing is accounted for in the tariff model; any time gap as per NTDC/Fuel supplier payment terms may result in working capital requirement. Cost of L/C for power purchase has not been included in tariff calculation.
- 8.22 Freight on RFO has not been assumed in the tariff and will be finalized at the time of Fuel Supply Agreement and incorporated in the tariff accordingly.

**PART III – CORRESPONDENCE BETWEEN  
ATLAS POWER AND PPIB**