

**BEFORE THE NATIONAL ELECTRIC
POWER REGULATORY AUTHORITY**

PETITION FOR TARIFF DETERMINATION

ON BEHALF OF

NISHAT MILLS LIMITED

FOR A POWER PROJECT OF APPROXIMATELY 200 MW

NEAR FAISALABAD IN THE PUNJAB PROVINCE

January 15, 2007

**Nishat Mills Limited
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A. Glossary

CEO	Chief Executive Officer
CPI	Consumer Price Index
CPP	Capacity Purchase Price
CPPA	Central Power Purchasing Agency of NTDC
EPC	Engineering Procurement and Construction
EPR	Energy Purchase Risk
FSA	Fuel Supply Agreement
IA	Implementation Agreement
IMF	International Monetary Fund
IPP	Independent Power Producer
IRR	Internal Rate of Return
ISO	International Standards Organization
KIBOR	Karachi Inter Bank Offered Rate
KV	Kilovolt
kW	Kilowatt
kWh	Kilowatt Per Hour
L/C	Letter of Credit
LFO	Light Fuel Oil (High Speed Diesel)
LHV	Lower Heating Value
LIBOR	London Inter Bank Offered Rate
LOI	Letter of Interest
LOS	Letter of Support
MW	Megawatt
MWh	Megawatt per hour
NEPRA	National Electric Power Regulatory Authority
Nishat Power	Nishat Power Limited (proposed)
NML	Nishat Mills Limited
NTDC	National Transmission and Dispatch Company Limited
O&M	Operation and Maintenance
OMC	Oil Marketing Company
Pak. Rs.	Pakistani Rupees
POE	Panel of Experts of PPIB
PPA	Power Purchase Agreement
PPIB	The Private Power & Infrastructure Board
Project	NML's proposed independent power project of approximately 200 MW capacity based on reciprocating engine single fuel RFO fired technology near Faisalabad in the Punjab province to be established and operated through Nishat Power.
RFO	Residual Fuel Oil
ROE	Return on Equity
Ton	Metric Tonne i.e. 1000 kg
USD	United State Dollars
WAPDA	Water And Power Development Authority
WPPO	Wapda Power Privatization Organization

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**").
- On December 29, 2005 the PPIB issued a permission letter to Nishat Mills Limited ("**NML**") as a member of the Nishat Group in respect of the installation of an approximately 200 MW capacity power generation plant near Faisalabad in the Punjab province (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. For the purpose of the Project, NML proposes to incorporate a company under the Companies Ordinance, 1984, in the name and style of Nishat Power Limited ("**Nishat Power**")
- 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 2005.
- In case NEPRA requires any further information, clarification or explanation from NML during its evaluation process, NML would be pleased to provide it as quickly as possible.

C. Particulars of Petition:

1. DETAILS OF THE PETITIONER

Name and Registered Office

Nishat Mills Limited (as sponsor of Nishat Power Limited (proposed))
Nishat House, 53A Lawrence Road
Lahore
Telephone: (042) 111-113-333
Facsimile: (042) 636-7414

Representatives of NML

- | | | |
|------|---------------------------|-------------------|
| i. | Mian Raza Mansha | Director |
| ii. | Mr. Umer Saeed | Tariff Consultant |
| iii. | Chaudhry Muhammad Hussain | Project Manager |

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 NML is a listed company incorporated and existing under the Companies Ordinance, 1984. For the purpose of the Project, NML proposes to incorporate a company under the Companies Ordinance, 1984, in the name and style of Nishat Power Limited.
- 2.3 In accordance with the requirements of the NEPRA Act and the rules and regulations made thereunder, NML hereby submits this Petition under the NEPRA (Tariff Standards and Procedure) Rules 1998, for tariff determination in respect of Nishat Power’s power generation facility situated near Faisalabad in the Punjab province.

3. INTRODUCTION

- 3.1 On December 29, 2005 the PPIB issued a permission letter to the NML as member of the Nishat 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 2005 and the applicable provisions of the 2002 Power Policy. It is therefore requested that this Tariff Petition may kindly be processed accordingly. NML undertakes to cause Nishat Power to apply to NEPRA for the grant of a generation license 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.* Nishat Power and NTDC, subject to NEPRA’s approval of a 25 year tariff acceptable to NML/Nishat 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 Nishat 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 NML, as and when required by NEPRA.

3.5 **Investment**

The investment cost estimate of the Project is presented below in US dollars (“**USD**”). The Engineering, Procurement and Construction (“**EPC**”) price is fixed at Euros 133.475 million (667.375 Euros/kW) and, converted at the reference exchange rate of 1.20 USD/Euro, this price will be USD 160.170 million (800.85 USD/kW). At this time we have assumed total EPC cost in foreign exchange.

	Project Costs	USD inm
1	EPC Cost	160.170
2	Taxes & Duties	8.189
3	Emergency spare parts	2.402
4	Mobilization Costs	2.860
5	Land purchase, fees and infrastructure	2.500
6	Development costs	2.940
7	Insurance costs	2.162
8	Admin & Utilities Expenses	1.650
9	Non EPC Construction & Other Capex	2.600
10	Financing Fees & Charges	3.724
	Total Capital Cost	189.197
11	Interest During Construction (IDC)	14.644
	Total Project Cost	203.841

3.6 **Itemized Explanation of Investment**

- 3.6.1 “EPC Cost” 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 storage that means three tanks of 10,000 m³ for RFO and one tank of 2,000 m³ for HSD, along with fuel loading, fuel unloading pumping system with all heating and piping’s as well as the fire containment area of about 7200 m². 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 Costs” covers the expenses of Nishat 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 Costs” 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 Costs” 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 “Admin & Utilities” includes the cost of annual staff costs, utilities during construction, cost of Independent Engineer and other administrative expenses.
- 3.6.9 “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, Fuel Cost during testing, Whether Station and other operational, office and electric equipments.

- 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 Nishat Power’s COD is based on a period of 18 months corresponding to January 31, 2009.

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. Nishat 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**

3.8.1 The capital structure of the Project is as follows:

<u>USD in Million</u>	
Equity	50.960
Total debt	152.881
Total Project Cost	203.841
Debt Equity Ratio	75:25

3.9 **Other Considerations**

3.9.1 The Project would offer significant relief locally in the transmission system of Faisalabad, 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 18 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 available indigenous RFO into electrical energy. Engines are well proven to use this type of fuel. Gas turbine based concepts were rejected as the main gas turbine manufacturers expressed their concerns that use of RFO in gas turbines would mean considerable de-rating both in power generating capacity as well as in efficiency from the nameplate capacities due to extensive fouling.

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 Nishat Power. The main components of the plant are eleven proven engine generators sets of type 18V46 manufactured by Wartsila of Finland 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 189 MW.

Note: Nishat Power's indicated net output of 189 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. Nishat Power also reserves the right to replace the afore-said Wartsila engines with "MAN" engines of different gross and net output as well as costs that may necessitate a modification in the tariff structure.

3.9.4 Based on the requirement of the Project for full load factor, a total of about 1000 tons of RFO per day will be transported by approximately 25 tank lorries of 40 tons each to the site. The LFO needs are difficult to estimate but no more than 3 tank lorries of 40 tons each per month will be needed.

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, tank 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.

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 Nishat 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 189 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
Levelized tariff	3.884	8.1105	11.9945	7.1967
Average tariff	3.1025	8.1105	11.2131	6.7279

Average (1-10 years) :	US cents 12.9060 /kWh (or Pak Rs.7.7436 /kWh)
Average (11-25 years) :	US cents 10.0845 /kWh (or Pak Rs.6.0507 /kWh)
Average (1-25 years) :	US cents 11.2131 /kWh (or Pak Rs.6.7279 /kWh)
Levelized (1-25 years) :	US cents 11.9945 /kWh (or Pak Rs.7.1967 /kWh)

**Nishat Mills Limited- IPP
Reference Tariff**

Net Output:MW 189,000
 RFO Price LHV (Rs./M. Ton) 22,140
 Thermal Efficiency (100% Load) 45.00%
 RFO Calorific Value (BTU/KG) 38,481

Year	Energy Charge, Rs/kWh			Capacity Charge- Rs/kWhour							Capacity Charge at 60%- Rs/kWh	Total tariff		
	Fuel	Variable O&M	Total	Escalable Fixed O&M	Escalable Insurance	W. C. Cost	With- Holding Tax	ROE	Loan Repayment	Interest Charges		T. Capacity Charge	Rs/kWh	US\$/kWh
1	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.2845	0.7312	1.7264	2.8773	7.7436	12.9060
2	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.3248	0.6910	1.7264	2.8773	7.7436	12.9060
3	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.3707	0.6451	1.7264	2.8773	7.7436	12.9060
4	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.4231	0.5926	1.7264	2.8773	7.7436	12.9060
5	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.4830	0.5328	1.7264	2.8773	7.7436	12.9060
6	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.5513	0.4645	1.7264	2.8773	7.7436	12.9060
7	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.6292	0.3865	1.7264	2.8773	7.7436	12.9060
8	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.7182	0.2975	1.7264	2.8773	7.7436	12.9060
9	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.8198	0.1959	1.7264	2.8773	7.7436	12.9060
10	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.9368	0.0800	1.7264	2.8773	7.7436	12.9060
11	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
12	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
13	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
14	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
15	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
16	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
17	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
18	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
19	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
20	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
21	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
22	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
23	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
24	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
25	4.3624	0.5040	4.8663	0.1400	0.0784	0.1114	0.0286	0.3523	0.0000	0.0000	0.7106	1.844	6.0507	10.0845
Levelised tariff (1.25 Years)				0.1400	0.0784	0.1114	0.0286	0.3523	0.3384	0.3492	1.3982	2.3304	7.1967	11.9945

ROE during construction 0.0666
 ROE 0.2857
Total Escalable ROE 0.3523

Rs/kWhour
 Rs/kWhour
 Rs/kWhour

15.0% p.a.

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 at 100% load, 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	0.4069	0.0971	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 Nishat Power. The main assumptions used to derive this price are:

(a)	RFO Price:	Rs. 22,140 per ton excluding transportation cost.
(b)	Thermal efficiency:	45.0% (life-cycle net at site conditions at 100% Load)
(d)	Output:	189 MW (net at site conditions)
(e)	Heat Rate:	8,000 kJ/kWh (LHV)
(f)	LHV of RFO	38,641.41 BTU/kg
(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 rate 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 USD/ 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 contract 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 on the reference dates:

- (a) Total Project Cost: USD 203,841,301 (Including fixed turnkey EPC price of 133,475,000 Euros)
- (b) Debt-Equity Ratio: 75:25
- (c) Exchange Rates: 1 USD = 60.0 Rupees; 1 Euro = 1.20 USD
- (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./USD = 60.00, Pak Rs./Euro = 72.00, and USD/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 Nishat 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						
Period	Fixed O&M	Insurance	Cost of WC	ROEDC	ROE	Withholding Tax	Total
Years 1-25	0.1400	0.0784	0.1114	0.0666	0.2857	0.0286	0.7107

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 minor 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.

6.6.1.5 Additionally, this component also includes the cost impact of a working capital loan to finance the Net Accounts Receivable with Sales Tax and Fill of Fuel.

The escalable component is based on the following parameters:

- (a) Equity Amount: USD 50,960,325 (25% of total project cost).
- (b) IRR: 15%-Net, after dividend withholding tax of 7.5%.
- (c) Repayment of Equity: None
- (d) Currency of Funding: PKR
- (e) Working Capital Loan and cost of working capital: A working capital loan facility of approximately USD 24,685,000 equivalent in Pak Rs. is assumed in order to finance the inventory of RFO, Net Accounts Receivables, Advance Payments for RFO 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.
- (f) Cost of Local Debt: 6 months KIBOR (10.45%) + 3% spread.
- (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./USD exchange rate
 - B. U.S. inflation

ROE shall be indexed to the following:

 - A. Pak Rs./USD 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 (Pak Rs./kWh)		
	Loan Repayment	Interest Charges	Total
Year 1	0.2845	0.7312	1.0158
Year 2	0.3248	0.6910	1.0158
Year 3	0.3707	0.6451	1.0158
Year 4	0.4231	0.5926	1.0158
Year 5	0.4830	0.5328	1.0158
Year 6	0.5513	0.4645	1.0158
Year 7	0.6292	0.3865	1.0158
Year 8	0.7182	0.2975	1.0158
Year 9	0.8198	0.1959	1.0158
Year 10	0.9358	0.0800	1.0158
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: USD 152,880,976 (75% of total Project cost including IDC)
- (b) Term of Loan: 18 months of construction period (grace) + 10 years of semi-annual debt service after the COD
- (c) Interest Rates: 6 months KIBOR (10.45%) + 3% spread
- (d) Currencies: Pak Rs.
- (e) Indexation: Funding in Pak Rs.: 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./USD and 1.20 USD/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

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./USD and 1.20 USD/Euro.

Variable O&M – Foreign: Pak Rs./Euro exchange rate

Escalable Capacity Payment:

Fixed O&M 60% Pak Rs./Euro exchange rate

Insurance Pak Rs./USD exchange rate

ROE Pak Rs./USD exchange rate

Non-Escalable Capacity Payment – Foreign Loan (If any)

The Interest During Construction as well as the Non-Escalable Charges shall be adjusted according to the prevailing relevant interest rate (+ spread).

7.3 **Interest Rate Indexation**

The following components are subject to interest rate indexation:

Non-Escalable Capacity Payment – Local Loan

Interest Charge 6 months KIBOR

7.4 **Base Changes**

Changes in the base price of fuel i.e. RFO shall be treated as a pass-through cost based on the guaranteed heat rate.

7.5 **Pass-Through Items**

Any taxes and levies etc. not factored in the tariff calculation shall be treated as pass-through items in the PPA.

7.6 **Adjustments at Commercial Operations Date**

7.6.1 The Escalable ROE Component and the Non-Escalable Components will be adjusted by the Inflation Factors and Reference Exchange Rates as defined and described in this Section 7 which prevail at the COD.

7.6.2 The Non-Escalable Component shall also be adjusted by the then prevailing 6-month KIBOR.

7.6.3 The Working Capital component shall also be updated with prevailing fuel price at the COD and KIBOR.

7.6.4 Hedging cost during construction on EPC payment will be made part of the Project cost as required by the lenders. Otherwise subject to the lenders' consent the final local amount at the COD would be based on actual Exchange Rates used by the lenders to make payment to the EPC contractor. Actual hedging cost will be used based on forward rates received from lead banks immediately after Financial Closing.

7.6.5 No contingency has been included in the Project costs.

8. **ASSUMPTIONS**

The following have been assumed while calculating the tariff. Changes in any of these assumptions will result in changes in the tariff:

8.1 Anticipated average site conditions that have been used in calculation of the net output and heat rate are an altitude of 214 (200) m above sea level, ambient temperature of 30°C, charge air coolant temperature of 40°C (47) and 60% relative humidity.

8.2 Annual Unscheduled Outages (MWh) up to 500 hours x Available Capacity (MW) shall be without any liquidated damages. Liquidated 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.
- 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 +/- 3.0% in Dispatch is assumed.
- 8.10 Plant availability of 86% has been assumed
- 8.11 The tariff table shall be further updated at COD of the Project in order to correct the tariff according to the prevailing KIBOR, LIBOR and exchange rates (Pak Rs./USD and Pak Rs./Euro).
- 8.12 All fuel during plant tests after synchronization is assumed to be paid for by the Power Purchaser.
- 8.13 Working capital has been financed by a separate working capital loan, and is not included in the Project cost.
- 8.14 Project contingency/debt service/maintenance reserves are not included in tariff calculations. If required by lenders, these will be adjusted accordingly in the tariff.
- 8.15 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.

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

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