National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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Registrar

No. NEPRA/R/TRF-68/APL-2007-1336-38
March 6, 2007

Subject: **Decision of the Authority regarding Generation Tariff of Atlas Power Ltd. (APL) (Case No. NEPRA/TRF-68/APL-2007)**
Intimation of Decision of Tariff pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997)

Dear Sir,

Please find enclosed the subject decision of the Authority along with Annex-I & II (45 pages) in Case No. NEPRA/TRF-68/APL-2007.

2. The decision is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997) and Rule 16(11) of the National Electric Power Regulatory Authority Tariff (Standards and Procedure) Rules, 1998.

3. Please note that only Order of the Authority at para 100 of the decision relating to the Reference Tariff and allowed adjustments & indexation along with Annex-I & II needs to be notified in the official gazette. The Order is reproduced for the purpose of clarity and is attached herewith.

DA/as above.

06.03.07.
(Mahjoob Ahmad Mirza)

The Secretary
Cabinet Division
Government of Pakistan
Cabinet Secretariat
Islamabad

CC:
1. Secretary, Ministry of Water & Power, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.

ORDER OF THE AUTHORITY
IN CASE NO. NEPRA/TRF-68/APL-2007
TO BE NOTIFIED IN THE OFFICIAL GAZETTE

Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, Atlas Power Limited (APL) is allowed to charge, subject to adjustment of Capacity Purchase Price on account of net dependable capacity as determined by test jointly carried out by Central Power Purchasing Agency (CPPA) and the petitioner, the following is approved as specified tariff for APL for delivery of electricity to CPPA of NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:

Reference Tariff

Tariff Components	Year 1 to 10	Year 11 to 25	Indexation
Capacity Charge PKR/kW/Hour)			
O&M Foreign	0.0652	0.0652	US$ /PKR & US CPI
O&M Local	0.0652	0.0652	WPI
Cost of Working Capital	0.0900	0.0900	KIBOR
Insurance	0.0836	0. 0836	US$ /PKR
Debt Service – Local	1.0060	-	KIBOR
Return on Equity	0.2830	0.2830	NIL
ROE during Construction	0.0480	0.0480	NIL
Total Capacity Charge	**1.6411**	**0.6351**	
Energy Charge on Operation on Furnace Oil Rs./kWh			
Fuel Cost Component	4.7811	4.7811	Fuel Price
Variable O&M	0.4362	0.4362	US$ /PKR & US CPI

Note: i) Capacity Charge Rs./kW/hour applicable to dependable capacity at the delivery point.

ii) Dispatch criterion will be Energy Charge.

iii) The above tariff is applicable for a period of 25 years commencing from the date of the Commercial Operation.

iv) Component wise tariff for operation on RFO is indicated at Annex-I.

The following adjustments /indexations shall be applicable to reference tariff;

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I. Adjustment in EPC Cost (One Time)

The Authority has assessed EPC cost as US$ 190.009 million out of which US$169.75 million (offshore) would be in Euro and US$20.259 million in US Dollar (onshore to be incurred in Pak Rupees). Since the exact timing of payment to EPC contractor is not known at this point of time therefore an adjustment for relevant foreign currency fluctuation for the portion of payment in the relevant foreign currency will be made. In this regard the sponsor will be required to provide all the necessary relevant details along with documentary evidence. Based upon such information the EPC cost components in Euro or Dollar shall be established and shall be applied to the corresponding EPC cost components. The adjustment shall be only for currency fluctuation against the reference Euro/dollar parity values according to the following mechanism. The adjustment would be allowed for a period up to 3 months or up to financial close whichever is earlier;

$$EPC_{(Adj.)} = US\$\ 169.75\ Million / 1.28 * E_{(PR)} + US\$\ 20.259\ Million$$

Where:

$E_{(PR)}$ = Weighted Average EURO to dollar parity based upon timing of the payment

The tariff components i.e. Insurance, ROE, ROEDC, Principal Repayment and Interest Charges shall be adjusted according to the following formula at COD.

i) Insurance Adjustment Mechanism for EPC Cost Variation

$$Ins_{(Rev)} = Ins_{(Ref)} / EPC_{(Ref)} \times EPC_{(Adj.)} \times P_{(Rev)} / 61$$

Where:

$Ins_{(Rev)}$	=	Revised reference insurance component of tariff
$Ins_{(Ref)}$	=	Reference insurance component of tariff as per original schedule of tariff
$EPC_{(Ref.)}$	=	Reference EPC in US$
EPC(Adj.)	=	Adjusted EPC in US$
$P_{(Rev)}$	=	Rupee to Dollar parity at COD
$P_{(Ref)}$	=	Reference Rupee to Dollar parity

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ii) Return on Equity Adjustment Mechanism for EPC Cost Variation

$$ROE_{(Rev)} = ROE_{(Ref)} / (25\% \times US\$224.426) \times (25\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

Where:

$ROE_{(Rev)}$ = Revised reference Return on Equity component of tariff

$ROE_{(Ref)}$ = Reference Return on Equity component of tariff as per original schedule of tariff

$PC_{(Rev.)}$ = Revised project cost after incorporating the adjustment for currency fluctuation

$P_{(Rev)}$ = Rupee to Dollar parity at COD

iii) ROEDC Adjustment Mechanism for EPC Cost Variation

$$ROEDC_{(Rev)} = 0.0480 / (US\$9.524 million) \times (EDC_{(Rev)}) \times P_{(Rev)} / 61$$

Where:

$ROEDC_{(Rev)}$ = Revised reference Return on Equity during Construction component of tariff

$EDC_{(Rev.)}$ = Revised Equity During Construction in million USD

$P_{(Rev)}$ = Rupee to Dollar parity at COD

Note: 9.524 million US$ is after adjustment of present value of equity at the end of the project life because the project is on BOO basis.

iv) Debt Servicing Adjustment Mechanism for EPC Cost Variation

$$DS_{(Rev)} = DS_{(Ref)} / US\$168.319 Million \times (75\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

Note: The adjustment factor established as per the above formula shall be applicable to the individual components of principal and interest during the entire repayment period.

$DS_{(Rev)}$ = Revised Debt Servicing component of tariff

$DS_{(Ref)}$ = Reference Debt Servicing component of tariff as per original schedule of tariff

$PC_{(Rev.)}$ = Revised project cost after incorporating the adjustment for currency fluctuation

$P_{(Rev)}$ = Rupee to Dollar parity at COD

II. Adjustment due to Variation in Net Capacity

All the tariff components except fuel cost component shall be adjusted at the time of COD based upon the Initial Dependable Capacity (IDC) tests

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to be carried out for determination of contracted capacity. Adjustment shall not be made if IDC is established less than 213.60 MW net capacity at reference site conditions. The adjustments shall be made according to the following formula:

$$CC_{(Adj.)} = CC_{(Ref)} \times 213.60MW / CN_{(IDC)}$$

Note: Above formula shall be applicable to all the individual relevant components of Capacity Charges.

Where;

$CC_{(Adj)}$ = Adjusted relevant Capacity Charge components of tariff

$CC_{(Ref)}$ = Reference relevant Capacity Charge components of tariff

NC = Net Capacity at reference site conditions established at the time of IDC test

Note:- Reference capacity charge components of Tariff i.e. Revised O&M Foreign, Revised O&M Local, Insurance, Debt Servicing, Return on Equity and ROEDC to be adjusted as per IDC test.

Reference Site Conditions:

Ambient Temperature	30 °C
Altitude	200 m
Relative humidity	60%
Water Temperature to Charge air cooler	45 °C

III. <u>Adjustment in Insurance as per actual</u>

The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser not exceeding 1.35% of the EPC cost will be treated as pass-through. Insurance component of reference tariff shall be adjusted as per actual on yearly basis upon production of authentic documentary evidence by APL according to the following formula;

Insurance (Rev) = AIC/(1.35 % x US$190.009 Million) * AP

Where;

AIC = Adjusted Insurance Component (Rs. kW/hr) as per IDC Test

AP = Actual Premium subject to maximum of 1.35% of the adjusted EPC

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IV. Adjustment Based on Actual Interest During Construction

Debt Service, Return on Equity and ROE during construction shall be adjusted on account of actual variation in drawdown and Interest During Construction with reference to the estimated figures.

APL shall submit the relevant documents to NEPRA within 7 days of COD for adjustment of relevant tariff components.

V. Adjustment due to Custom Duties & Taxes

Debt Service, Return on Equity and ROE during construction shall be adjusted on account of actual variation in custom duties & Taxes with reference to the estimated figures of US$ 8.4875 million. The impact of withholding tax on local services is not known at this point of time. However, these will be adjusted along with other duties and taxes as per the actual on provision of documentary evidence at COD.

APL shall submit the relevant documents to NEPRA within 7 days of COD for adjustment of relevant tariff components.

VI. Adjustment for variation in Dollar/Rupee parity

Relevant reference tariff components shall be adjusted at COD on account of variation in Dollar/Rupee parity.

VII. Pass-Through Items

i) No provision for income tax has been accounted for in the tariff. If APL is obligated to pay any tax on its ROE, the exact amount paid by the company may be reimbursed by CPPA to APL on production of original receipts. This payment may be considered as pass-through (as Rs./kW/hour) hourly payment spread over a 12 months period in addition to the capacity purchase price proposed in the Reference Tariff. Furthermore, in such a scenario, APL may also submit to CPPA details of any tax shield savings and CPPA will deduct the amount of these savings from its payment to APL on account of taxation.

ii) Withholding tax is also a pass through item just like other taxes as indicated in the government guidelines for determination of tariff for new IPPs. In a reference tariff table withholding tax number is indicated as

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reference and CPPA (NTDC) shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 15% reference equity i.e. hourly payment (Rs./kW/hour) spread over a 12 month according to the following formula:

Withholding Tax Payable = [{15% * ($E_{(Ref)} - E_{(Red)}$} +$ROEDC_{(Ref)}$] * 7.5%

Where:

$E_{(Ref)}$ = Adjusted Reference Equity at COD

$E_{(Red)}$ = Equity Redeemed

$ROEDC_{(Ref)}$= Reference Return on Equity During Construction

iii) In case Company does not declare a dividend in a particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what is paid in that year and the total entitlement as per the Net Return on Equity) would be carried forward and accumulated so that the Company is able to recover the same in hourly payments spread over 12 months period as a pass through from the Power Purchaser in future on the basis of the total dividend pay out.

VIII. Indexations:

The following indexation shall be applicable to the reference tariff as follows;

a) Indexation applicable to O&M

The Fixed O&M local component of Capacity Charge will be adjusted on account of Inflation (WPI) and Fixed O&M foreign component 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 (FBS), US CPI issued by US Bureau of Labor Statistics and revised TT & OD selling rate of US Dollar notified by the National Bank of Pakistan. The mode of indexation will be as under:

i) Fixed O&M

$F\ O\&M_{(LREV)}$ = Rs. 0.0652/kW/Hour * $WPI_{(REV)}$ / 118.96

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$F\ O\&M_{(FREV)}$ = Rs.0. 0652/kW/Hour * US $CPI_{(REV)}$/202.41* $ER_{(REV)}$/61

Where:

$F\ O\&M_{(LREV)}$ = the revised applicable Fixed O&M Local Component of the Capacity Charge indexed with WPI

$F\ O\&M_{(FREV)}$ = the revised applicable Fixed O&M Foreign Component of the Capacity Charge indexed with US CPI and Exchange Rate variations

$WPI_{(REV)}$ = the revised wholesale Price Index (manufactures)

$WPI_{(REF)}$ = 118.96 wholesale price index (manufactures) of January 2007 notified by Federal Bureau of Statistics

US $CPI_{(REV)}$ = the revised US CPI

US $CPI_{(REF)}$ = 202.41 US CPI for the month of January 2007 as notified by the US Bureau of Labor Statistics

$ER_{(REV)}$ = the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

Note: The reference numbers indicated above shall be replaced by the revised numbers after incorporating the required adjustments at COD.

ii) Variable O&M

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

$V\ O\&M_{(LREV)}$ = Rs. 0.0928 /kW/Hour * $WPI_{(REV)}$ /118.96

$V\ O\&M_{(FREV)}$ = Rs.0. 3434/kW/Hour * US $CPI_{(REV)}$/202.41* $ER_{(REV)}$/61

Where:

$V\ O\&M_{(LREV)}$ = the revised applicable Variable O&M Local Component of the Capacity Charge indexed with WPI

$V\ O\&M_{(FREV)}$ = the revised applicable Variable O&M Foreign Component of the Capacity Charge indexed with US CPI and Exchange Rate variations

$WPI_{(REV)}$ = the revised wholesale Price Index (manufactures)

$WPI_{(REF)}$ = 118.96 wholesale price index (manufactures) of January 2007 notified by Federal Bureau of Statistics

US $CPI_{(REV)}$ = the revised US CPI

US $CPI_{(REF)}$ = 202.41 US CPI for the month of January 2007 as notified by the US Bureau of Labor Statistics

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$ER_{(REV)}$ = the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

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

iii) Adjustment for KIBOR variation

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

$$\Delta I_{(L)} = P_{(LREV)} * (KIBOR_{(REV)} - 10.45\%) / 4$$

Where:

$\Delta I_{(L)}$ = the variation in interest charges on local loan applicable corresponding to variation in quarterly KIBOR. Δ I 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 Δ I for each quarter under adjustment applicable on quarterly

$P_{(REV)}$ = 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 1st installment is due after availing the grace period.

iv) Fuel Price Variation

The Variable Charge Part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations according to the mechanism given below:

$$FC_{(Rev)} = (Rs.4.3223 \text{ per kWh} * FP_{(Rev)}) / Rs.23,247.07 \text{ per ton} + (Rs.0.4588 \text{ per kWh} * Ft_{(Rev)}) / Rs.2,467.50 \text{ per ton}$$

Where:

$FC_{(Rev)}$ = Revised fuel cost component of Variable Charge on RFO.

$Ft_{(Rev)}$ = Revised Freight Charges adjusted for NHV-GHV factor

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$FP_{(Rev)}$ = The new price of RFO per Metric Ton adjusted for NHV/GHV factor of 1.05 as per the following mechanism;

Description	**US$/Ton**	**Rs./Ton**
HSFO Arab Gulf Average Price for applicable Fortnight (From Platts Oilgram Report) Black Premium (From OGRA)		
C & F Price – A		
Crude Handling and Incidental charges (7.282% of C&F Price)*		
Sub-Total – B		
EX Refinery Price – (C=A+B)		
GST (15% of EX Refinery Price		
Selling Price – D		
OMC Margin (3.5% of Selling Price) GST (15% on OMC Margin)		
Sub Total – E		
Market Price – (F=D+E)		
Cost of RFO excluding GST (GHV)		
Inland Freight		
Total Cost of RFO excluding GST (GHV)		

US$ Pak Rupee Exchange Rate-NBP Selling TT/OD at the date of applicable fuel price

* This charge shall vary with market supply/demand position but shall not exceed 8% of C&F price, to be uniformly charged to all customers including APL.

The fuel cost component will be adjusted after the commercial operation date, according to revision in RFO price on fortnightly basis as per above mechanism.

Adjustment on account of local inflation, foreign inflation, foreign exchange rate variation, KIBOR variation and fuel price variation will be approved and announced by the Authority for immediate application within seven working days after receipt of APL's request for adjustment in accordance with the requisite indexation mechanism stipulated herein.

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IX. Terms and Conditions of Tariff:

i) The plant availability shall be 90%.

ii) All new equipment will be installed and the plant will be of standard configuration.

iii) Dispatch criterion will be based on the Energy Charge.

iv) Internal consumption (including air-cooled condenser) has been assumed to be approximately 5.55 MW.

v) Annual Unscheduled Outages (MWh) up to 500 hours x Available Capacity (MW) without any liquidated damages shall be in accordance with the 2006 standardized PPA.

vi) Scheduled Outage periods per annum shall be in accordance with the 2006 standardized PPA.

vii) NTDC will be responsible for constructing the interconnection to the grid.

viii) All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.

ix) Tolerance in Dispatch shall be in accordance with 2006 standardized PPA.

x) If there is any change in any assumption that may lead to change in the tariff shall be referred to NEPRA for approval.

xi) If IPP is required by the power purchaser to deliver power above 132 kV, any additional cost to be incurred by the IPP submitted to NEPRA for adjustment. The adjustment request by the IPP shall be duly verified by the power purchaser.

The above tariff and terms and conditions be incorporated in the Power Purchase Agreement between APL and CPPA.

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Atlas Power Limited
Reference Tariff Table

Year	Variable Charge (Rs./kWh)			Capacity Charge (Rs./kW/Hour)									Capacity Charge at 60% PF	Tariff	
	Fuel	Variable O&M	Total	Fixed O&M	Cost of Working Capital	Insurance	ROE	ROEDC	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Total	Rs. per kWh	Rs. per kWh	¢ per kWh
1	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.2818	0.7242	1.6660	2.7766	7.9939	13.3231
2	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.3216	0.6844	1.6660	2.7766	7.9939	13.3231
3	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.3671	0.6389	1.6660	2.7766	7.9939	13.3231
4	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.4191	0.5869	1.6660	2.7766	7.9939	13.3231
5	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.4783	0.5277	1.6660	2.7766	7.9939	13.3231
6	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.5460	0.4600	1.6660	2.7766	7.9939	13.3231
7	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.6232	0.3828	1.6660	2.7766	7.9939	13.3231
8	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.7114	0.2947	1.6660	2.7766	7.9939	13.3231
9	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.8120	0.1940	1.6660	2.7766	7.9939	13.3231
10	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.9268	0.0792	1.6660	2.7766	7.9939	13.3231
11	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
12	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
13	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
14	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
15	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
16	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
17	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
18	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
19	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
20	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
21	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
22	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
23	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
24	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
25	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
Levelized Tariff (1-25Years)			**5.2173**	**0.1305**	**0.0900**	**0.0836**	**0.2830**	**0.0480**	**0.0248**	**0.3352**	**0.3458**	**1.3409**	**2.2349**	**7.4522**	**12.4203**

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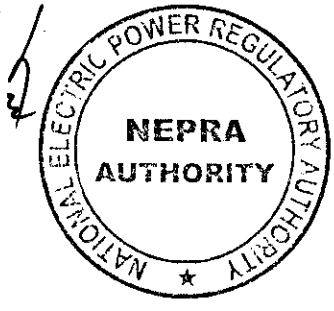
Atlas Power Limited
Debt Servicing Schedule

Period	Local Debt					Annual Principal Repayment Rs./kW/ hr.	Annual Interest Rs./kW/ hr.	Annual Debt Servicing Rs./kW/ hr.
	Principal Million $	Repayment Million $	Mark-Up Million $	Balance Million $	Debt Service Millin $			
	168.32	2.05	5.66	166.26	7.7147			
	166.26	2.12	5.59	164.14	7.7147			
	164.14	2.20	5.52	161.94	7.7147			
	161.94	2.27	5.45	159.68	7.7147			
1	168.32	8.64	22.21	159.68	30.8587	0.2818	0.7242	1.0060
	159.68	2.35	5.37	157.33	7.7147			
	157.33	2.42	5.29	154.91	7.7147			
	154.91	2.51	5.21	152.40	7.7147			
	152.40	2.59	5.12	149.81	7.7147			
2	159.68	9.87	20.99	149.81	30.8587	0.3216	0.6844	1.0060
	149.81	2.68	5.04	147.13	7.7147			
	147.13	2.77	4.95	144.36	7.7147			
	144.36	2.86	4.85	141.50	7.7147			
	141.50	2.96	4.76	138.55	7.7147			
3	149.81	11.26	19.60	138.55	30.8587	0.3671	0.6389	1.0060
	138.55	3.06	4.66	135.49	7.7147			
	135.49	3.16	4.56	132.33	7.7147			
	132.33	3.26	4.45	129.07	7.7147			
	129.07	3.37	4.34	125.69	7.7147			
4	138.55	12.85	18.00	125.69	30.8587	0.4191	0.5869	1.0060
	125.69	3.49	4.23	122.21	7.7147			
	122.21	3.61	4.11	118.60	7.7147			
	118.60	3.73	3.99	114.87	7.7147			
	114.87	3.85	3.86	111.02	7.7147			
5	125.69	14.67	16.19	111.02	30.8587	0.4783	0.5277	1.0060
	111.02	3.98	3.73	107.04	7.7147			
	107.04	4.12	3.60	102.92	7.7147			
	102.92	4.25	3.46	98.67	7.7147			
	98.67	4.40	3.32	94.27	7.7147			
6	111.02	16.75	14.11	94.27	30.8587	0.5460	0.4600	1.0060
	94.27	4.54	3.17	89.73	7.7147			
	89.73	4.70	3.02	85.03	7.7147			
	85.03	4.86	2.86	80.18	7.7147			
	80.18	5.02	2.70	75.16	7.7147			
7	94.27	19.12	11.74	75.16	30.8587	0.6232	0.3828	1.0060
	75.16	5.19	2.53	69.97	7.7147			
	69.97	5.36	2.35	64.61	7.7147			
	64.61	5.54	2.17	59.06	7.7147			
	59.06	5.73	1.99	53.34	7.7147			
8	75.16	21.82	9.04	53.34	30.8587	0.7114	0.2947	1.0060
	53.34	5.92	1.79	47.41	7.7147			
	47.41	6.12	1.59	41.29	7.7147			
	41.29	6.33	1.39	34.97	7.7147			
	34.97	6.54	1.18	28.43	7.7147			
9	53.34	24.91	5.95	28.43	30.8587	0.8120	0.1940	1.0060
	28.43	6.76	0.96	21.67	7.7147			
	21.67	6.99	0.73	14.68	7.7147			
	14.68	7.22	0.49	7.46	7.7147			
	7.46	7.46	0.25	0.00	7.7147			
10	28.43	28.43	2.43	0.00	30.8587	0.9268	0.0792	1.0060



NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
(NEPRA)

***

No. NEPRA/TRF-68/APL-2007
March 5, 2007

Petitioner

Atlas Power Limited (APL)
2nd Floor, Federation House, Sharae Firdousi, Clifton, Karachi - 75600

Authority

Nasiruddin Ahmed
Member

Zafar Ali Khan
Member

Abdul Rahim Khan
Member

Lt. General (R) Saeed uz Zafar
Chairman

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Background

1. Atlas Power Limited (APL) is a public limited company incorporated and existing under the Companies Ordinance 1984, established for setting up power plant 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. According to APL net generation of the proposed power plant will be 213.60 MW (net at site conditions) at 132 kV Bus Bar in terms of the Policy for Power Generation Projects 2002 (the "Policy"). The electricity generated will be sold to Central Power Purchasing Agency (CPPA) within NTDC.

2. APL submitted a tariff application on 15.1.2007 for approval of generation tariff. This tariff petition was admitted for consideration by the Authority on January 17, 2007 and was assigned case number NEPRA/TRF-68/APL-2007. Salient features of the petition were advertised in the newspapers on January 19, 2007 to inform all the interested persons/stakeholders and to invite participation in the tariff-setting proceedings through their comments or by becoming a party to the proceedings as interveners. Invitations were also sent to the concerned Federal & Provincial Government ministries, Chambers of Commerce and Industries, Representatives of Professional bodies and Experts, soliciting their views on the petition.

3. A public hearing on the petition was held on February 3, 2007 in Pearl Continental Hotel Lahore. This hearing was participated by the applicant, stakeholders, commentators as well as general public.

SUBMISSIONS OF APL

Investment

4. 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.

	Project Costs	**US$ in m**
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
	Total Project Cost	**228.26**

Itemized Explanation of Investment

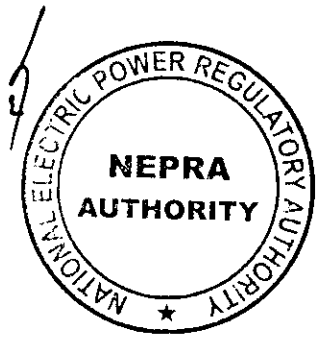
5. "EPC" covers power generation sets together with all the necessary auxiliary machinery, equipment and systems including the erection and commissioning of the equipment and construction of buildings. Our stated EPC cost includes cost of the fuel tank for 30 days of RFO storage along with fuel loading, fuel unloading pumping system with all heating and piping 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.

6. "Taxes & Duties" covers all import taxes and duties as per the 2002 Power Policy said to be 5% of EPC cost.

7. "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.

8. "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.

9. "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.



10. "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.

11. "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.

12. "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 includes Admin & Office Buildings, Residential Colonies and Procurement of telecommunication system, Power & Water Connections, SCADA, Weather Station and other operational, office and electric equipment.

13. "Admin & Utilities" includes the cost of annual staff costs, utilities during construction, cost of Independent Engineer and other administrative expenses.

14. "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.

15. "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.

Financial Analysis

16. 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.

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(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.

Capital Structure

17. The capital structure of the Project is as follows:

US$ in Million	
Equity	57.06
Total debt	171.20
Total Project Cost	228.26
Debt Equity Ratio	75:25

Other Considerations

18. 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.

19. 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.

20. 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

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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.*

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

22. 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.

23. 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)

24. 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.

25. 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.

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Tariff Summary

26. 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.

27. 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
Levelized tariff	3.8890	8.1107	11.9997	7.1998
Average tariff	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)

Energy Charges

28. 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.

29. 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.

30. A summary of the energy price is provided in the table below:

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

Fuel Component

31. This component represents the fuel consumption at a guaranteed efficiency level for the plant based on a notional 60% capacity factor.

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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%.

Local Variable O&M

32. 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"**).

Foreign Variable O&M

33. 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.

34. 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.

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CAPACITY CHARGES

35. 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.

36. 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.

37. 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.

38. 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.

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

40. The capacity charge is further broken down into two components:

Escalable Capacity Payment

- 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

- 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.
- 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).
- 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%)

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+ 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

Non-Escalable Capacity Payment

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

	Non-Escalable Component (Rs./kWh)		
Period	**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

- 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)

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(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.

ESCALATIONS AND INDEXATIONS

41. 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 herein below:

Inflation Factors

41.1 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.

Currency Indexation

41.2 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

Escalable Capacity Payment:

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

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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.

Interest Rate Indexation

41.3 The following components are subject to interest rate indexation:

Non-Escalable Capacity Payment – Foreign Loan	
Interest Charge	6 months LIBOR
Non-Escalable Capacity Payment – Local Loan	
Interest Charge	6 months KIBOR

Base Changes

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

Pass-Through Items

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

Adjustments at Commercial Operations Date

41.6 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.

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

41.8 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.

41.9 No contingency has been included in the Project costs.

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Timeline/Completion of Project

42. APL has submitted following timeline/completion of project:

- Tariff Determination 28th February, 2007
- FSA 31st March 2007
- PPA 30th April 2007
- Implementation Agreement 30th April 2007
- EPC Contract 30th April 2007
- Financial Close 31st July 2007
- Construction completion: 31st March 2009

ASSUMPTIONS

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

- Internal consumption (including air-cooled condenser) has been assumed to be approximately 5.55 MW.
- 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.
- 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.
- A constant ROE is assumed, which results in an IRR of 15% over 25 years.
- No hedging cost has been assumed for exchange rate fluctuations during construction.
- NTDC is assumed to be responsible for financing and constructing the interconnection to the grid.
- All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.
- The tariff is calculated on the basis of a notional 60% plant load factor.
- Tolerance of +/– 3% in Dispatch is assumed during normal operation.
- 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).
- All fuel during plant tests after synchronization are assumed to be paid for by the Power Purchaser.

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- Working capital has been financed by a separate working capital loan, and is not included in the Project cost.
- Project contingency/debt service/maintenance reserves are not included in tariff calculations. If required by lenders, these will be adjusted accordingly in the tariff.
- 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.
- Duties & Taxes on the import of plant & equipment have been assumed for reference purposes, any change therein would be pass -through.
- 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.
- No withholding tax on local construction services and EPC/offshore contractors have been considered in tariff calculation.
- 100% local debt is assumed. If foreign debt is procured, repayment terms shall be affected.
- 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.
- 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.
- 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.
- 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.

Determination Sought:

44. The National Electric Power Regulatory Authority (NEPRA) is requested to kindly grant the Tariff Determination in respect of the following:

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a) Grant Tariff as requested in the Reference Tariff Tables to remain effective for a period of 25 years from the date of Commercial Operations; and

b) Approve the proposed escalations in Tariff.

Comments from Central Power Purchasing Agency (CPPA)

45. CPPA has submitted following comments:

A. Feasibility Study has not been carried out by the Company, being exempted due to Fast Track Project.

B. The project cost estimates and other date provided in the petition do not has any input from any independent source.

C. The information provided needs to be reviewed critically.

D. The project cost seems to be on higher side.

E. Following discrepancies have been have been found in the cost estimation of the project;

i) EPC Cost

EPC seems to be on higher side. The EPC cost of US$ 179.40 million has not been bifurcated into equipment cost, civil works and erection cost.

ii) Taxes and Duties

Taxes and Duties has been calculated at the rate of 5% of EPC but the same is payable only on the imported equipment. As such the Custom Duty is not payable on Erection Civil work and local equipment.

iii) Emergency spare parts:

Emergency spare parts are required for the operation and maintenance of the plant therefore this cost of US$ 2.69 million may not be included in the project Cost.

iv) Mobilization

The cost of US$ 3.3 million seems to be on higher side.

v) Land Purchase

The cost of land of US$ 3.00 million is on higher side. The land requirement for such like plant is between 25 to 30 acres.

vi) Development Cost

The project being a Fast Track Project was dispensed with pre-qualification, feasibility studies and LOI, through PPIB letter of dated 29-

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12-2005. Therefore expenditure of US$ 3.5 million should be zero under this head.

vii) Insurance Costs

The cost of US$ 2.42 million seems to be reasonable being comparable with other project (1.35% of EPC value)

viii) Non-EPC Construction

The proposed cost of 3.2 million for Non-EPC construction seems to be reasonable.

ix) Admin. & Utilities

The cost of US$ 2.3 million seems to be on higher side. Detail of the expenditure and staff has not been provided by the Company.

x) Financing Fee & Charges

US$ 4.5 million are reasonable but the request of Company for considering certain amount pass through in case of foreign financing may not be accepted.

xi) Interest during Construction:

The amount of Interest During Construction (US$ 14.98) at the rate of KIBOR+ 3% i.e.10.45% and LIBOR plus 3% is compatible with similar projects.

xii) Other Consideration

A number of plants has been planed in the area, such as, Sapphire CC, Halmore each 209 MW, Chichoki Mallian 110 MW, APL 200 MW, Tapal at Kamoki, Rental Power Plant 286 MW. The completion period has been estimated as 20 months, but Company may under take to complete the project by 31.10.2008.

xiii) Dispersal of Power

NTDC has yet to carry out study for the interconnection of the facility with NTDC system after finalization of site of project.

xiv) Fuel Cost

The fuel cost has been assumed as Rs. 22,140 per ton but without transportation charges. For comparison purpose the transportation cost may be included in the fuel cost. Price indexation would be a problem, fuel being a pass through item.

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xiv) Efficiency

45% life cycle net at site conditions.

xvi) Calorific Value

Company has assumed calorific value CV OF 38,481 BTU/kg LHV where NEPRA determination rate CV (HHV) 40,792.

xvii) Variable O&M

The Company has proposed a V.O&M of Rs.0.05040 per KWh but no details has been provided. However this seems on the higher side. The VO&M for similar plant operating as IPPs is around Rs.0.32/kWh.

xviii) Fixed O&M

The Company has proposed a fixed O&M as Rs. 0.1411/kWh been proposed but no detail has been provided on which the rate is based.

xix) Insurance

The rate of insurance of Rs. 0.777/kWh is compatible with similar project.

xx) ROE

The ROE proposed by the Company is 15% but equity share in the project cost is 25%.

xxi) Indexation

a) The Company has demanded European CPI on fixed O&M (60%) and Pakistani WPI (40%). As per GOP Policy 50% of Fixed O&M part is indexed for US CPI and Dollar/Rupee exchange rate and 50% of fixed O&M part is indexed for local inflation (WPI).

b) Variable O&M: The Company demanded European CPI on foreign part of Variable O&M. As per GOP Policy US CPI is admissible.

c) Insurance: The Company has asked for US CPI and Exchange Rate variation on Insurance cost. Whereas insurance has been fixed as 1.35% of EPC cost in Dollars (maximum) adjustable as per actual.

d) ROE: The Company has asked for US inflation/Pak Inflation and Pak RS/US$ exchange rate. As per GOP Policy PAK RS/US$ exchange variation is allowed for foreign invest only.

ASSUMPTIONS

- Availability of the plant should be 88% whereas the Company has proposed 86% Annual availability.

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- Tolerance of +_ 3 % in dispatch is not allowed under the methodology provided in 2006 PPA. The payment is based on performance. No minus tolerance is admissible. However upward tolerance of 1.2% is under consideration.
- Fuel cost component of the EPP will be paid by Power Purchaser for the energy delivered to NTDC system before COD not the fuel cost.
- Starts up charges are not admissible for technology.
- As per GOP policy for Fast Track project the COD should be October 31, 2008 whereas the company has proposed COD as March 31, 2009.
- Freight may be considered part of fuel cost. Otherwise indexation of fuel component will be a problem.

Comments from SHEHRI

46. While being aware of the need for additional electricity generation in Pakistan, we are even more aware of the ecological degradation (whose effects will linger for decades) that is being brought about while producing the electricity we presently generate. We are also concerned that the economic interests of the consumer should not be sacrificed at the altar of expediency. SHEHRI brings the Authority attention on the following;

The Pakistan Environmental Protection Act (PEPA) 1997 mandates that 200 MW thermal power plants with grid-stations:

a) Submit Environmental Impact Assessment (EIA), a procedure that involves Public Hearings and a review by a committee of experts; construction of power plants cannot commence without EIA approval

b) Submit monthly reports on liquid and gaseous emissions to verify compliance with NEQS limits

47. We generally observe these laws in the breach, shortsightedly preferring so-called "development" to protection of the "environment". The results of such self-destructive behaviour are recorded in:

- WWF's "Living Planet Report 2006" (downloadable from < http://assets.panda.org/downloads/living_planet_report.pdf>)
- Stern Review Report "Economics of Climate Change" (downloadable from www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm)

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48. According to SHEHRI if tariffs are proposed to be approved by NEPRA for a 25 years period, this will frustrate the establishment of an open competitive market (scheduled for 2009 /2012) to which the Government of Pakistan is committed. The interests of the consumers will be adversely and severely affected, and the credibility of the government damaged.

49. The following main issues have emerged from the tariff application, submissions of the commentators and proceedings in the case:

ISSUES

A. Plant Capacity
B. Project Cost
   i). EPC Cost
   ii). Emergency Spare Parts
   iii). Mobilization Cost
   iv). Development Cost
   v). Land Acquisition and Improvements
   vi). Non EPC Construction
   vii). Admin & Utilities
C. Project Financing
D. Financing Fees
E. Interest During Construction
F. Capacity Charge
   i). Fixed O&M
   ii). Insurance
   iii). Cost of Working Capital
   iv). Return on Equity
   v). Return on Equity During Construction
   vi). Debt Servicing
G. Energy Charge
   i). Fuel Cost
   ii). Variable O&M Cost
H. Timeline/Completion of Project

50. Issue wise discussion and recommendations are given in following paragraphs:

A. Plant Capacity

51. According to the petitioner four-stroke diesel engines were selected, as the primary objective of the plant is to convert the available indigenous RFO into electrical energy and these Engines are well proven to use this type of fuel. While justifying the selection of aforementioned plant the petitioner has stated that the selected plant configuration would offer the best and most economical performance for APL Power. The proposed plant concept is based on a 224.35 MW (ISO) power plant single fuel RFO diesel engines in combined cycle. The

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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 subject to the following;

(i) APL 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.

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

(iii) Internal consumption (including air-cooled condenser) has been assumed to be approximately 5.55 MW.

52. Having considered all the relevant information, the Authority has decided to adopt the petitioner's indicated gross and net capacity at reference site conditions as per above detail. The Authority has further decided that all the tariff components except fuel cost component shall be adjusted at the time of COD based upon the Initial Dependable Capacity (IDC) tests to be carried out for determination of contracted capacity. Adjustment shall not be made if IDC is established less than 213.60 MW net capacity at reference site conditions. In case of higher net capacity the adjustments shall be made according to the following formula:

$$CC_{(Adj.)} = CC_{(Ref)} / CN_{(IDC)} \times 213.60MW$$

Note: Above formula shall be applicable to all the individual relevant components of Capacity Charges.

Where;

$CC_{(Adj)}$ = Adjusted relevant Capacity Charge components of tariff

$CC_{(Ref)}$ = Reference relevant Capacity Charge components of tariff

NC = Net Capacity at reference site conditions established at the time of IDC test

Note:- Reference capacity charge components of Tariff i.e. Revised O&M Foreign, Revised O&M Local, Insurance, Debt Servicing, Return on Equity and ROEDC to be adjusted as per IDC test.

Reference Site Conditions:

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Ambient Temperature	30 °C
Altitude	200 m
Relative humidity	60%
Water Temperature to Charge air cooler	45 °C

B. Project Cost

i). EPC Cost

53. According to the petitioner its EPC price has been assumed as Euros 149.5 million (666 Euros per kW). The petitioner was asked through information direction to provide item wise currency wise breakup of EPC cost. In response to information direction the petitioner vide letter dated February 9, 2007 stated that the EPC price quoted is turnkey lump sum cost and did not provide itemized breakup of cost. The petitioner in the petition has however stated that its EPC cost covers power generation sets together with all the necessary auxiliary machinery, equipment and systems including the erection and commissioning of the engineering, procurement and construction (EPC).

54. In a similar case under consideration of the Authority, the petitioner has stated that the turnkey EPC cost includes engineering, supply delivery to site, erection, commissioning and training of the power generation equipment, electrical system, switchgear, substation, buildings, engines and administration buildings, ware house and workshops and all civil works, engine tools, fuel tanks, fuel treatment system and fuel receiving system. In the absence of detailed EPC cost breakup the Authority is constrained to rely upon the details of work to be carried out as mentioned by the petitioner of other similar case.

55. The petitioner however has provided following currency wise estimate of the EPC;

Equipment Cost	Euro 132.6174 million
Civil Works/Erection Cost, etc	USD 20.2591 million

56. The Authority has considered the following justification given by the petitioner in support of 4% higher EPC cost as compared to that of Attock's EPC cost;

- Attocks' EPC cost does not include the cost of fuel storage tanks, fuel handling facility and other infrastructure costs as their proposed site is within or adjacent to Attock Refinery Limited's existing facilities and storage facility for indigenously produced fuel oil is available within the Refinery premises;

- The continuous increase in raw material prices has led to an increase in engine auxiliary costs;
- There is an immense increase in demand for engines and other major equipment such as generators and transformers, not only in Pakistan but also globally in both the marine and power sectors;

57. According to the petitioner Attock's tariff petition was submitted in June 2006 and related to a project period of 15 months, while its tariff petition was submitted in January 2007 and relates to a project period of about 20 months. The petitioner requested that the Authority should keep in mind this variance in timelines. According to the petitioner with each passing day, the lead times from the manufacturers are increasing as demand and supply position has shifted dramatically in favour of manufacturers, thereby resulting in significant cost increases.

58. In order to assess the reasonability of the EPC cost the Authority took Attock's EPC cost as reference. The Authority observed that although the cost of fuel tanks was not included in the Attock's EPC cost but Attock was allowed US$ 300,000 per annum as lease rental for usage of this facility and land etc. which is already available with the refinery. This cost over the 25 year life of the project works out as 7.5 million US$. Assuming cost of land of about 1.5 million US$ the remaining cost of 6 million US$ with Euro/dollar conversion factor of 1.2, the EPC cost for Attock comparable to APL plant size works out as 148.14 million Euro. If the impact of inflation @ 1.5% is added, the adjusted EPC cost at par with Attock would have been €150.36 million. The Authority therefore considers that the petitioner's request for EPC cost of €149.5 million (666 Euros per kW) is reasonable therefore has decided to accept as such using 1.28 Euro/dollar parity the offshore EPC price works out as 169.75 million US$ and the total EPC cost of the project is equivalent to 190.009 million US$.

ii). Emergency Spare Parts

59. The petitioner in its petition has demanded emergency spare parts equivalent to US$ 2.691 million which are 1.5% of EPC cost. According to the explanation given by the petitioner "Emergency Spare Parts cover the cost of standard lot of spare parts aimed to reduce as much as possible the stop times for maintenance of the plant. CPPA in its comments as indicated above in paragraph 45(iii) has objected the provision of cost for emergency spare parts in

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the project cost on the ground that the cost of such parts is already covered under O&M.

60. The Authority, having considered all the arguments and comments, is of the view that disallowing cost of emergency spare parts in the instant case would not be just because this cost has been allowed to Attock. On the principle of equity and justice the Authority has decided to allow US$ 2.546 million (1.5% of offshore EPC) inclusive of taxes and duties as cost of emergency spare parts.

iii). Mobilization Cost

61. The petitioner's request for 3.300 million US$ as against mobilization cost was on the higher side and needed very strong justification and evidence in support thereof. Accordingly the petitioner was asked to provide rationale/justification of this cost. The petitioner in its response has provided the following details;

Mobilization payments to MAN	US$1.240 million
Design Review (S. Pound 270,000 + Rs.20 m)	US$0.880 million
EPC Contract Services (S. Pound 250000+Rs.15m)	US$0.750 million
Interview and hiring of personnel	US$0.430 million
Total mobilization Cost	**US$3.300 million**

62. The petitioner has not provided any details regarding the mobilization payments to MAN; therefore Authority had to rely on the information available in the similar cases.

63. The Authority while determining the mobilization cost has also considered costs indicated under Admin and Utilities by the petitioner. Having considered all the relevant information available in Authority's opinion US$1.93 million is reasonable cost on account of Mobilization, Admin and Utilities and allows the same.

iv). Development Cost

64. The petitioner has requested development cost of US$ 3.500 million as per following breakdown;

Mott MacDonald:	
Feasibility study (S. Pound 150000+Rs.5m)	US$ 0.380 million
Project Appraisal (S. Pound 25000+Rs.10m)	US$ 0.220 million
Services for lender (S. Pound 35000+Rs.30m)	US$ 0.570 million
Project review and assess fee by lender's T. Advisor	US$ 0.260 million
PPA letter of credit	US$ 0.060 million
Bank Guarantee	US$ 0.010 million

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PPIB Legal fee	US$ 0.100 million
NEPRA, PPIB & NTDC fees	US$ 0.100 million
Delay in start up insurance	US$ 0.900 million
Lawyer fee (Local)	US$ 0.200 million
Lawyer fee (Foreign)	US$ 0.300 million
Company incorporation exp. Incl. stamp duty	US$ 0.400 million
Total:	**US$ 3.500 million**

65. In CPPA's opinion the development cost requested by the petitioner is on the higher side and has recommended NEPRA to review this cost in detail.

66. The careful analysis of the above individuals cost items revealed that the provision of costs for services for lender, project review and assessment fee by lender's technical advisor and delay in start up insurance to the tune of US$1.730 million is excessive and is not justified. The same are therefore being disallowed. The Authority has assessed the revised development cost of US$1.770 million.

v). Land Acquisition and Improvements

67. The petitioner has requested US$ 3.000 million for purchase of 25 acres of land, fees and infrastructure. The petitioner has assumed land price of Rs.6 million per acre. In Authority's opinion the cost of land assumed by the petitioner is extraordinary high. The petitioner was advised to provide the documentary evidence in support of its claim. According to the information provided by the petitioner the cost of land per acre is Rs. 3.2 million. According to the documentary evidence provided by the petitioner the Authority has determined cost of land including brokers fee, registration cost, leveling and embankment equal to US$ 1.73 million of 25 acres of land.

Non EPC Construction

68. The petitioner has requested US$3.200 million as per the following details;

Admin Office Building with Electrical Installation, etc.	US$ 0.900 million
Residential Colony with Electrical installations etc.	US$ 1.500 million
Generator Rent, Diesel etc.	US$ 0.260 million
Other Constructions permits, connections etc.	US$0.250 million
Station vehicles, office & electrical equipments, computers, softwares, etc.	US$ 0.290 million
Total Non EPC	**US$ 3.200 million**

69. The Authority has evaluated above individual cost components of non EPC cost and has observed that admin office building is in the scope of EPC contractor therefore cannot be allowed as separate items again. As regards the

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cost of residential colony, the Authority considers that the advantage of the proposed project location is that it is in the vicinity of the big cities and the proposed residential colony will not be required. However, in order to provide residential facility for skilled worker an amount of US$ 0.2 million is being allowed.

70. In Authority's opinion only generator rent and diesel, other construction permits, connections station vehicles, office & electrical equipments, computers and softwares etc are legitimate which are being allowed. The Authority has assessed this cost as US$ 1.00 million.

Admin & Utilities

71. The petitioner has requested for Admin and Utilities US$ 2.3 million which includes US$ 1.30 million as cost of Independent Engineer (Owner's Engineer). The Authority considers that costs provided under Admin and Utilities are already covered under mobilization cost therefore cannot be considered under separate head of Admin and Utilities.

C. Project Financing

72. The petitioner has proposed following capital structure of the project;

Equity	US$ 57.06
Total debt	US$ 171.20
Total Capital Cost (excl IDC)	US$ 228.26
Debt Equity Ratio	75:25

73. As per the information provided by the petitioner the total project cost is inclusive of IDC of US$ 14.98 million.

74. Based upon the analysis of different project cost items the project cost of the petitioner has been revised to US$ 224.4258 million and the corresponding Debt: Equity breakup of US$ 168.319 million debt and US$ 56.106 million equity.

D. Financing Fees

75. The petitioner has requested financing fee and charges to the tune of US$4.50. The Authority considers that the petitioner's request is reasonable therefore for the purpose of assessment of financing fees and charges the Authority has assumed 2.5% as a reasonable level for financing fees and charges. Accordingly the Authority has assessed US$ 3.848 for revised amount of debt US$ 153.93 million (excluding IDC and Financing Fees and Charges).

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This assessed amount will be adjusted at COD as per the actual subject to the maximum of 3%.

E. Interest During Construction

76. The amount of interest during construction of US$ 14.98 million requested by the petitioner is based upon its estimated project cost of US$228.263 million. The petitioner has based its calculation assuming a construction period of 20 months, which in the case of Upfront Tariff and Attock has been allowed as 15 months by the Authority. The Authority is of the view that in order to incorporate unforeseen factors additional 3 months should be allowed to the petitioner. The Authority has therefore decided to allow 18 months construction period. Based upon the assessed project cost of US$224.426 and18 months construction period the Authority has assessed US$ 10.539 as IDC which will be adjusted at the time of COD as per actual disbursement.

Adjustment due to Custom Duties & Taxes

77. The petitioner estimated US$ 8.97 million as Custom Duties & Taxes. The Authority has assessed US$ 8.488 million. The impact of withholding tax on local services is not known at this point of time. However, these will be adjusted along with other duties and taxes as per the actual on provision of documentary evidence at COD. The petitioner shall be required to submit the relevant documents to NEPRA within 7 days of COD for adjustment of relevant tariff components.

F. Capacity Charge

i) Fixed O&M

78. The petitioner requested for fixed O&M of US$ 4.40 million per annum or Rs. 0.1411 per kW per hour assuming the rupee/dollar parity of 60. In Authority's opinion the petitioner's proposed O&M cost is on higher side particularly costs provided for staff salaries and wages and office overhead environment costs. The Authority in other similar case has allowed the fixed O&M cost of US$ 3.795 million. The Authority is of the view that the fixed cost do not vary in direct proportion according to the size of plant. Therefore the cost requested by the petitioner needs to rationalized. In Authority's opinion the reasonable level of fixed O&M cost per annum in the instant US$ 4.002 million. For conversion from dollar to rupees, the parity rate of 61 rupees to a dollar is adopted in order to make the tariff more realistic. Accordingly the adjusted fixed

O&M cost at this rupee/dollar parity has been assessed as Rs. 0.1305 per kW per hour.

ii) Insurance

79. The petitioner has requested insurance @ 1.35% of EPC cost. The request being inline with the cases already determined by the Authority therefore is accepted. The Authority has accordingly assessed Rs. 0.0836 per kW per hour as cost of insurance.

iii) Cost of Working Capital

80. The petitioner requested financing cost of working capital to the tune of US$ 3.55 million on the basis of following working capital requirement;

Fuel Inventory (30 days)	US$ 11.34 million
Advance for fuel (15 days)	US$ 5.67 million
Receivables – Fixed 30% for 60 days (load 60%)	US$ 1.35 million
Receivables – Variable 100% for 30 days (load 60%)	US$ 7.59 million
Sales Tax 15% of fuel inventory and advance	US$ 2.55 million
Total capital cost needed	**US$ 28.50 million**

Cost of the loan @ 12.45% (KIBOR 10.45% + 200 points spread)

(This total corresponds to the tariff components of Rupees 0.1137 kWh or approximately US$ 3.55 million)

81. As per the terms of PPA the IPP is required to maintain fuel inventory level equivalent to 30 days generation at 100% load factor. The working in the instant case for inventory is inline with the PPA requirement. Based upon the reference fuel price of Rs. 22,140 + Freight Rs. 2,350 per M/Ton the Authority has assessed fuel stock requirement at 100% load factor as US$ 12.054 million.

82. The Authority has considered the request of the petitioner for allowing advance for fuel (15 days). The Authority has been informed that the 30 days requirement of fuel inventory is worked out by taking closing stock of fuel inventory plus orders placed to the supplier for fuel delivery. The Authority considers that the petitioner would not be required to raise working capital for advance payments to the fuel supplier. The Authority has therefore decided to disallow the proposed provision of 15 days advance for fuel.

83. The Authority has considered the request of the petitioner for allowing receivables – fixed 30% for 60 days (60% load factor). In Authority's opinion the petitioners request is not justified because 70% of the capacity charge is paid in advance and this can be managed by the petitioner without additional working capital requirement.

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84. The petitioner has requested receivables – Variable 100% for 30 days (60% load factor). The Authority has been informed that under the PPA terms the petitioner will raise its invoice for energy payment after each 30 days and the power purchaser will make payment after next 30 days. On the average 30 days energy charge at 60% dispatch will remain in the billing cycle for which the petitioner will require additional working capital. Since the petitioner's request is legitimate therefore the Authority has decided to accept the same. For this purpose the Authority considers that only fuel cost will be relevant. Accordingly the Authority has assessed US$ 7.232 million working capital requirement on this account.

85. The petitioner's request regarding provision of 15% sales tax on inventory and receivables is justified therefore the Authority has decided to allow the same in the working capital requirement. Based upon the assessed requirement of US$22.179 million at Rupee/dollar parity of 61, the financing cost @ 12.45% (KIBOR 10.45% + 200 points spread) has been assessed as US$ 2.761 million or Rs. 0.0900 per kW per hour. This cost shall be adjusted according to the actual prices prevalent at the time of first fill at COD according to the following formula;

$$WCC_{(adj)} = 0.0900 / 29571 * FP_{(current)}$$

Where;

$WCC_{(adj)}$ = *Adjusted cost of working capital*

$FP_{(current)}$ = *Actual fuel price at the time of first fill*

iv) Return on Equity (ROE)

86. The petitioner has requested Rs. 0.2831 on the basis of equity of US$57.06 to achieve net 15% IRR on its equity investment. The Authority has assessed equity of US$ 56.106 million on the basis of revised project cost and reference rupee/dollar parity. Based upon the revised equity the ROE of Rs.0.2830 per kW per hour has been determined. The petitioner's request for allowing inflation/indexation to the ROE cannot be accepted because GoP policy does not allow any indexation on the local equity. However, in case of foreign equity only rupee/dollar exchange variation is allowed and no other indexation on account o inflation is permissible.

v) Return on Equity During Construction (ROEDC)

87. The petitioner has requested ROEDC of Rs. 0.0742 per kW per hour. The Authority has assessed ROEDC as Rs. 0.048 per kW per hour which will be

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adjusted on the basis of actual equity injection during 18 months construction period.

vi) Debt Servicing

88. The petitioner requested debt service of Rs. 1.0064 per kW per hour on the basis of debt of US$ 171.20. The Authority has assessed overall debt amount of US$168.319 million. The Authority has assumed interest in the instant case as 13.45% (10.45% KIBOR +300 basis points). The Authority has assessed debt service component of Rs. 1.006 per kW per hour. The petitioner will be allowed adjustment on account of variation in KIBOR on quarterly basis.

G. Energy Charge

i) Fuel Cost

89. The petitioner has requested fuel cost of Rs. 4.3624 per kWh (excluding freight) on the basis of following reference numbers;

(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:	45.0% (life-cycle net at site conditions)
(d)	Output:	213.60 MW (net at site conditions)
(e)	Heat Rate:	7,584 BTU/kWh (LHV)
(f)	LHV of RFO	38,481 BTU/kg subject to adjustment at the time of finalization of Fuel Supply Agreement (FSA)
(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%.

90. The Authority considers that there is an anomaly in the different assumptions for calculating fuel cost component because the petitioner's assumed calorific value is not that of the fuel of which the fuel prices have been adopted i.e. Arabian Gulf prices for RFO. The calorific value assumed by the petitioner is much lower than that for the reference fuel prices.

91. The Authority in the case of Attock has already prescribed a mechanism for determination of fuel cost component along with adjustment on account of fuel price variation. In order to maintain consistency the Authority has decided

to adopt the same mechanism. For the purpose of calculation of fuel cost component the following reference values have been used;

RFO Price (HHV)	Rs. 22,140 per ton
Inland Freight	Rs. 2,350
Total Price RFO (HHV)	**Rs. 24,490**
LHV, HHV adjustment factor	1.05
RFO Price (LHV)	**Rs. 25,714 per ton**
Calorific Value	40,792 BTU/Kg

92. Based upon the above reference values the fuel cost component in the instant case the Authority has assessed as Rs. 4.7811 per kWh i.e. fuel cost Rs.4.3223 and freight Rs.0.4588. The Variable Charge Part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations according to the mechanism given below:

$FC_{(Rev)}$ = (Rs.4.3223 per kWh * $FP_{(Rev)}$)/ Rs.23,247.07 per ton + (Rs.0.4588 per kWh * $Ft_{(Rev)}$)/Rs.2,467.50 per ton

Where:

$FC_{(Rev)}$ = Revised fuel cost component of Variable Charge on RFO.

$Ft_{(Rev)}$ = Revised Freight Charges adjusted for NHV-GHV factor

$FP_{(Rev)}$ = The new price of RFO per Metric Ton adjusted for NHV/GHV factor of 1.05 as per the following mechanism;

Description	**US$/Ton**	**Rs./Ton**
HSFO Arab Gulf Average Price for applicable Fortnight (From Platts Oilgram Report) Black Premium (From OGRA)		
C & F Price – A		
Crude Handling and Incidental charges (7.282% of C&F Price)*		
Sub-Total – B		
EX Refinery Price – (C=A+B)		
GST (15% of EX Refinery Price		
Selling Price – D		
OMC Margin (3.5% of Selling Price) GST (15% on OMC Margin)		
Sub Total – E		
Market Price – (F=D+E)		
Cost of RFO excluding GST (GHV)		
Inland Freight		
Total Cost of RFO excluding GST (GHV)		

US$ Pak Rupee Exchange Rate-NBP Selling TT/OD at the date of applicable fuel price

* This charge shall vary with market supply/demand position but shall not exceed 8% of C&F price, to be uniformly charged to all customers including APL.

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ii) Variable O&M Cost

93. The petitioner has requested for variable O&M of Rs. 0.4300 per kWh (Foreign) and Rs. 0.0740 per kWh (Local). In Authority's opinion the petitioner's demand was on the higher side; therefore, the petitioner was asked to provide breakdown of major cost components of variable O&M like lubricants, water treatment, consumables, spares for major overhauling and operators fee the variable O&M cost duly supported with detailed maintenance schedule indicating number of operating hours after which the major overhauling is required along with corresponding cost details. The petitioner was also advised to provide procedure adopted for selecting O&M contractor duly supported with evidence. In response the petitioner vide its letter dated February 1st, 2007 stated that its variable O&M of Rs. 0.5040 per kWh which translates into US$9.4308 million per annum. According to the petitioner this included lubricants, repair and maintenance, other O&M consumables/water treatment, major overhauling spares and import duty on spare parts @ 10%.

94. During the hearing CPPA showed its serious concerns over the variable O&M of 0.5040 per kWh proposed by the petitioner for which no details were provided. According to CPPA the actual variable O&M for similar plant operation operating as IPPs is on the lower side. KEL is charging Rs. 0.32164/kWh. Japan Power is charging Rs. 0.27137/kWh and SEPCOL is charging Rs. 0.4156/kWh. CPPA has also submitted written comments vide letter no. COO/CPPA/CE-II/335 dated 8.2.2007.

95. The Authority observed that the variable O&M has not been supported with documentary evidence therefore cannot be accepted as such. Alternatively for assessment of reasonable level of variable O&M cost the Authority considers that the Attock's case can be considered as reference. The Authority assessed the average annual variable O&M cost as US$7.6992 million that translates into €4.6909 per MWh (inclusive of duties & taxes) with Euro/Dollar conversion factor of 1.20, which in rupee term works out as Rs.0.3434 at a parity of 1.2 Euro/Dollar and Rupee/Dollar parity of 61 and is being allowed subject to the condition that the O&M operator shall guaranteed 90% plant availability. In case the plant availability is less than 90% then this O&M cost shall accordingly be adjusted. In a similar case the Authority has allowed cost of lubricants as €1.2676 per MWh which translates into Rs. 0.0928 per kWh with a conversion of

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Euro/Dollar parity of 1.20 and Rupee/Dollar parity of 61. The same is being allowed in the instant case.

96. The petitioner's request for adjustment on account of variation in Rupee/Euro parity indexed with Euro inflation is not justified. The review of the information available with the Authority revealed that the parts for major overhauling would be required after 12,000 running hours, which means that major overhauling would be undertaken after about two years. The power purchaser would start making payment on monthly basis corresponding to the units received. There are two possible arrangements that an IPP can have; (i) the payments to O&M contractor are made on monthly basis in advance; (ii) the payments are made at the time of occurrence of major overhauling. In case the payment is made on monthly basis the payment which is made to O&M operator can earn a certain return. In Authority's opinion in the instant case if 7% per annum return on payments made in advance is assumed, it should be sufficient to cover variation in Euro/Dollar parity along with Euro inflation. In second case scenario assuming opportunity cost equivalent to cost of working capital allowed to petitioner which presently is about 12.45% would result in a saving on this account which should be sufficient to cover the possible Euro/Dollar exchange rate variation and Euro inflationary impact.

97. From the above analysis the Authority concluded that since there is an inbuilt compensation mechanism for Euro/Dollar exchange rate variation and indexation; therefore Euro/Dollar exchange rate variation and Euro inflation cannot be allowed. The Authority has however decided to allow Rupee/Dollar exchange rate variation and US CPI according to the additional concessions/amendments in the policy for Power Generation Projects 2002 by GOP that states;

> *"the foreign component of O&M Cost (variable and fixed) would be indexed with US CPI, effective from the month of application by the IPP to NEPRA for tariff determination, if it is demonstrated by the IPP to NEPRA that the inflation indexation is not already covered in the O&M contract". It is recommended that in order to cover abnormal situation if in a particular year the combined impact of exchange rate variation and international inflation is more than the opportunity cost assessed in either of the above*

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mentioned cases, the adjustment should be allowed to IPP to the extent of amount exceeding the opportunity cost".

Indexation/Inflation Factor

98. The Authority has considered the request of the petitioner for allowing Rupee/Euro exchange rate variation and European inflation on foreign portion of Fixed and Variable O&M cost and is of the view that under the existing GOP policy such kind of indexations are not allowed. The policy only allows Rupee/Dollar variation adjustment and US CPI on foreign portion of O&M cost; the same is therefore being allowed.

H. Timeline/Completion of Project

99. The Authority has considered the proposed timeline/completion of project by the petitioner as indicated at para 42 and decided to allow the same as such.

ORDER

100. Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, Atlas Power Limited (APL) is allowed to charge, subject to adjustment of Capacity Purchase Price on account of net dependable capacity as determined by test jointly carried out by Central Power Purchasing Agency (CPPA) and the petitioner, the following is approved as specified tariff for APL for delivery of electricity to CPPA of NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:

Reference Tariff

Tariff Components	Year 1 to 10	Year 11 to 25	Indexation
Capacity Charge PKR/kW/Hour)			
O&M Foreign	0.0652	0.0652	US$ /PKR & US CPI
O&M Local	0.0652	0.0652	WPI
Cost of Working Capital	0.0900	0.0900	KIBOR
Insurance	0.0836	0. 0836	US$ /PKR
Debt Service – Local	1.0060	-	KIBOR
Return on Equity	0.2830	0.2830	NIL
ROE during Construction	0.0480	0.0480	NIL
Total Capacity Charge	**1.6411**	**0.6351**	
Energy Charge on Operation on Furnace Oil Rs./kWh			
Fuel Cost Component	4.7811	4.7811	Fuel Price
Variable O&M	0.4362	0.4362	US$ /PKR & US CPI

Note: i) Capacity Charge Rs./kW/hour applicable to dependable capacity at the delivery point.

ii) Dispatch criterion will be Energy Charge.

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iii) The above tariff is applicable for a period of 25 years commencing from the date of the Commercial Operation.

iv) Component wise tariff for operation on RFO is indicated at Annex-I.

The following adjustments /indexations shall be applicable to reference tariff;

I. <u>Adjustment in EPC Cost (One Time)</u>

The Authority has assessed EPC cost as US$ 190.009 million out of which US$169.75 million (offshore) would be in Euro and US$20.259 million in US Dollar (onshore to be incurred in Pak Rupees). Since the exact timing of payment to EPC contractor is not known at this point of time therefore an adjustment for relevant foreign currency fluctuation for the portion of payment in the relevant foreign currency will be made. In this regard the sponsor will be required to provide all the necessary relevant details along with documentary evidence. Based upon such information the EPC cost components in Euro or Dollar shall be established and shall be applied to the corresponding EPC cost components. The adjustment shall be only for currency fluctuation against the reference Euro/dollar parity values according to the following mechanism. The adjustment would be allowed for a period up to 3 months or up to financial close whichever is earlier;

$EPC_{(Adj.)}$=US$ 169.75 Million/ 1.28 * $E_{(PR)}$ + US$ 20.259 Million

Where:

$E_{(PR)}$ = Weighted Average EURO to dollar parity based upon timing of the payment

The tariff components i.e. Insurance, ROE, ROEDC, Principal Repayment and Interest Charges shall be adjusted according to the following formula at COD.

i) <u>Insurance Adjustment Mechanism for EPC Cost Variation</u>

$$Ins_{(Rev)} = Ins_{(Ref)} / EPC_{(Ref)} \times EPC_{(Adj.)} \times P_{(Rev)} / 61$$

Where:

$Ins_{(Rev)}$ = Revised reference insurance component of tariff

$Ins_{(Ref)}$ = Reference insurance component of tariff as per original schedule of tariff

$EPC_{(Ref.)}$ = Reference EPC in US$

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EPC(Adj.) = Adjusted EPC in US$

$P_{(Rev)}$ = Rupee to Dollar parity at COD

$P_{(Ref)}$ = Reference Rupee to Dollar parity

ii) Return on Equity Adjustment Mechanism for EPC Cost Variation

$$ROE_{(Rev)} = ROE_{(Ref)} / (25\% \times US\$224.426) \times (25\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

Where:

$ROE_{(Rev)}$ = Revised reference Return on Equity component of tariff

$ROE_{(Ref)}$ = Reference Return on Equity component of tariff as per original schedule of tariff

$PC_{(Rev.)}$ = Revised project cost after incorporating the adjustment for currency fluctuation

$P_{(Rev)}$ = Rupee to Dollar parity at COD

iii) ROEDC Adjustment Mechanism for EPC Cost Variation

$$ROEDC_{(Rev)} = 0.0480 / (US\$9.524 million) \times (EDC_{(Rev)}) \times P_{(Rev)} / 61$$

Where:

$ROEDC_{(Rev)}$ = Revised reference Return on Equity during Construction component of tariff

$EDC_{(Rev.)}$ = Revised Equity During Construction in million USD

$P_{(Rev)}$ = Rupee to Dollar parity at COD

Note: 9.524 million US$ is after adjustment of present value of equity at the end of the project life because the project is on BOO basis.

iv) Debt Servicing Adjustment Mechanism for EPC Cost Variation

$$DS_{(Rev)} = DS_{(Ref)} / US\$168.319 Million \times (75\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

Note: The adjustment factor established as per the above formula shall be applicable to the individual components of principal and interest during the entire repayment period.

$DS_{(Rev)}$ = Revised Debt Servicing component of tariff

$DS_{(Ref)}$ = Reference Debt Servicing component of tariff as per original schedule of tariff

$PC_{(Rev.)}$ = Revised project cost after incorporating the adjustment for currency fluctuation

$P_{(Rev)}$ = Rupee to Dollar parity at COD

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II. Adjustment due to Variation in Net Capacity

All the tariff components except fuel cost component shall be adjusted at the time of COD based upon the Initial Dependable Capacity (IDC) tests to be carried out for determination of contracted capacity. Adjustment shall not be made if IDC is established less than 213.60 MW net capacity at reference site conditions. The adjustments shall be made according to the following formula:

$$CC_{(Adj.)} = CC_{(Ref)} \times 213.60MW / CN_{(IDC)}$$

Note: Above formula shall be applicable to all the individual relevant components of Capacity Charges.

Where;

$CC_{(Adj)}$ = Adjusted relevant Capacity Charge components of tariff

$CC_{(Ref)}$ = Reference relevant Capacity Charge components of tariff

NC = Net Capacity at reference site conditions established at the time of IDC test

Note:- Reference capacity charge components of Tariff i.e. Revised O&M Foreign, Revised O&M Local, Insurance, Debt Servicing, Return on Equity and ROEDC to be adjusted as per IDC test.

Reference Site Conditions:

Ambient Temperature	30 °C
Altitude	200 m
Relative humidity	60%
Water Temperature to Charge air cooler	45 °C

III. Adjustment in Insurance as per actual

The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser not exceeding 1.35% of the EPC cost will be treated as pass-through. Insurance component of reference tariff shall be adjusted as per actual on yearly basis upon production of authentic documentary evidence by APL according to the following formula;

Insurance (Rev) = AIC/(1.35 % x US$190.009 Million) * AP

Where;

AIC = Adjusted Insurance Component (Rs. kW/hr) as per IDC Test

AP = Actual Premium subject to maximum of 1.35% of the adjusted EPC

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IV. Adjustment Based on Actual Interest During Construction

Debt Service, Return on Equity and ROE during construction shall be adjusted on account of actual variation in drawdown and Interest During Construction with reference to the estimated figures.

APL shall submit the relevant documents to NEPRA within 7 days of COD for adjustment of relevant tariff components.

V. Adjustment due to Custom Duties & Taxes

Debt Service, Return on Equity and ROE during construction shall be adjusted on account of actual variation in custom duties & Taxes with reference to the estimated figures of US$ 8.4875 million. The impact of withholding tax on local services is not known at this point of time. However, these will be adjusted along with other duties and taxes as per the actual on provision of documentary evidence at COD.

APL shall submit the relevant documents to NEPRA within 7 days of COD for adjustment of relevant tariff components.

VI. Adjustment for variation in Dollar/Rupee parity

Relevant reference tariff components shall be adjusted at COD on account of variation in Dollar/Rupee parity.

VII. Pass-Through Items

i) No provision for income tax has been accounted for in the tariff. If APL is obligated to pay any tax on its ROE, the exact amount paid by the company may be reimbursed by CPPA to APL on production of original receipts. This payment may be considered as pass-through (as Rs./kW/hour) hourly payment spread over a 12 months period in addition to the capacity purchase price proposed in the Reference Tariff. Furthermore, in such a scenario, APL may also submit to CPPA details of any tax shield savings and CPPA will deduct the amount of these savings from its payment to APL on account of taxation.

ii) Withholding tax is also a pass through item just like other taxes as indicated in the government guidelines for determination of tariff for new IPPs. In a reference tariff table withholding tax number is indicated as reference and CPPA (NTDC) shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 15% reference equity i.e. hourly payment

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(Rs./kW/hour) spread over a 12 month according to the following formula:

Withholding Tax Payable = [{15% * ($E_{(Ref)} - E_{(Red)}$} +$ROEDC_{(Ref)}$] * 7.5%

Where:

$E_{(Ref)}$ = Adjusted Reference Equity at COD

$E_{(Red)}$ = Equity Redeemed

$ROEDC_{(Ref)}$= Reference Return on Equity During Construction

iii) In case Company does not declare a dividend in a particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what is paid in that year and the total entitlement as per the Net Return on Equity) would be carried forward and accumulated so that the Company is able to recover the same in hourly payments spread over 12 months period as a pass through from the Power Purchaser in future on the basis of the total dividend pay out.

VIII. Indexations:

The following indexation shall be applicable to the reference tariff as follows;

a) Indexation applicable to O&M

The Fixed O&M local component of Capacity Charge will be adjusted on account of Inflation (WPI) and Fixed O&M foreign component 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 (FBS), US CPI issued by US Bureau of Labor Statistics and revised TT & OD selling rate of US Dollar notified by the National Bank of Pakistan. The mode of indexation will be as under:

i) Fixed O&M

$F\ O\&M_{(LREV)}$ = Rs. 0.0652/kW/Hour * $WPI_{(REV)}$ /118.96

$F\ O\&M_{(FREV)}$ = Rs.0. 0652/kW/Hour * US $CPI_{(REV)}$/202.41* $ER_{(REV)}$/61

Where:

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F O&M$_{(LREV)}$	=	the revised applicable Fixed O&M Local Component of the Capacity Charge indexed with WPI
F O&M$_{(FREV)}$	=	the revised applicable Fixed O&M Foreign Component of the Capacity Charge indexed with US CPI and Exchange Rate variations
WPI$_{(REV)}$	=	the revised wholesale Price Index (manufactures)
WPI$_{(REF)}$	=	118.96 wholesale price index (manufactures) of January 2007 notified by Federal Bureau of Statistics
US CPI$_{(REV)}$	=	the revised US CPI
US CPI$_{(REF)}$	=	202.41 US CPI for the month of January 2007 as notified by the US Bureau of Labor Statistics
ER$_{(REV)}$	=	the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

Note: The reference numbers indicated above shall be replaced by the revised numbers after incorporating the required adjustments at COD.

ii) <u>Variable O&M</u>

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

V O&M$_{(LREV)}$	=	Rs. 0.0928 /kW/Hour * WPI $_{(REV)}$ /118.96
V O&M$_{(FREV)}$	=	Rs.0. 3434/kW/Hour * US CPI$_{(REV)}$/202.41* ER$_{(REV)}$/61

Where:

V O&M$_{(LREV)}$	=	the revised applicable Variable O&M Local Component of the Capacity Charge indexed with WPI
V O&M$_{(FREV)}$	=	the revised applicable Variable O&M Foreign Component of the Capacity Charge indexed with US CPI and Exchange Rate variations
WPI$_{(REV)}$	=	the revised wholesale Price Index (manufactures)
WPI$_{(REF)}$	=	118.96 wholesale price index (manufactures) of January 2007 notified by Federal Bureau of Statistics
US CPI$_{(REV)}$	=	the revised US CPI
US CPI$_{(REF)}$	=	202.41 US CPI for the month of January 2007 as notified by the US Bureau of Labor Statistics
ER$_{(REV)}$	=	the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

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

iii) Adjustment for KIBOR variation

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

$$\Delta I_{(L)} = P_{(LREV)} * (KIBOR_{(REV)} - 10.45\%) / 4$$

Where:

$\Delta I_{(L)}$ = the variation in interest charges on local loan applicable corresponding to variation in quarterly KIBOR. Δ I 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 Δ I for each quarter under adjustment applicable on quarterly

$P_{(REV)}$ = 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 1st installment is due after availing the grace period.

iv) Fuel Price Variation

The Variable Charge Part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations according to the mechanism given below:

$$FC_{(Rev)} = (Rs.4.3223 \text{ per kWh} * FP_{(Rev)}) / Rs.23,247.07 \text{ per ton} + (Rs.0.4588 \text{ per kWh} * Ft_{(Rev)}) / Rs.2,467.50 \text{ per ton}$$

Where:

$FC_{(Rev)}$ = Revised fuel cost component of Variable Charge on RFO.

$Ft_{(Rev)}$ = Revised Freight Charges adjusted for NHV-GHV factor

$FP_{(Rev)}$ = The new price of RFO per Metric Ton adjusted for NHV/GHV factor of 1.05 as per the following mechanism;

Description	US$/Ton	Rs./Ton
HSFO Arab Gulf Average Price for applicable Fortnight (From Platts Oilgram Report) Black Premium (From OGRA)		
C & F Price – A		

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Crude Handling and Incidental charges (7.282% of C&F Price)*		
Sub-Total – B		
EX Refinery Price – (C=A+B)		
GST (15% of EX Refinery Price		
Selling Price – D		
OMC Margin (3.5% of Selling Price) GST (15% on OMC Margin)		
Sub Total – E		
Market Price – (F=D+E)		
Cost of RFO excluding GST (GHV)		
Inland Freight		
Total Cost of RFO excluding GST (GHV)		

US$ Pak Rupee Exchange Rate-NBP Selling TT/OD at the date of applicable fuel price

* This charge shall vary with market supply/demand position but shall not exceed 8% of C&F price, to be uniformly charged to all customers including APL.

The fuel cost component will be adjusted after the commercial operation date, according to revision in RFO price on fortnightly basis as per above mechanism.

Adjustment on account of local inflation, foreign inflation, foreign exchange rate variation, KIBOR variation and fuel price variation will be approved and announced by the Authority for immediate application within seven working days after receipt of APL's request for adjustment in accordance with the requisite indexation mechanism stipulated herein.

IX. Terms and Conditions of Tariff:

i) The plant availability shall be 90%.

ii) All new equipment will be installed and the plant will be of standard configuration.

iii) Dispatch criterion will be based on the Energy Charge.

iv) Internal consumption (including air-cooled condenser) has been assumed to be approximately 5.55 MW.

v) Annual Unscheduled Outages (MWh) up to 500 hours x Available Capacity (MW) without any liquidated damages shall be in accordance with the 2006 standardized PPA.

vi) Scheduled Outage periods per annum shall be in accordance with the 2006 standardized PPA.

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vii) NTDC will be responsible for constructing the interconnection to the grid.

viii) All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.

ix) Tolerance in Dispatch shall be in accordance with 2006 standardized PPA.

x) If there is any change in any assumption that may lead to change in the tariff shall be referred to NEPRA for approval.

xi) If IPP is required by the power purchaser to deliver power above 132 kV, any additional cost to be incurred by the IPP submitted to NEPRA for adjustment. The adjustment request by the IPP shall be duly verified by the power purchaser.

The above tariff and terms and conditions be incorporated in the Power Purchase Agreement between APL and CPPA.

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Atlas Power Limited
Reference Tariff Table

Year	Variable Charge (Rs./kWh)			Capacity Charge (Rs./kW/Hour)									Capacity Charge at 60% PF	Tariff	
	Fuel	Variable O&M	Total	Fixed O&M	Cost of Working Capital	Insurance	ROE	ROEDC	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Total	Rs. per kWh	Rs. per kWh	¢ per kWh
1	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.2818	0.7242	1.6660	2.7766	7.9939	13.3231
2	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.3216	0.6844	1.6660	2.7766	7.9939	13.3231
3	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.3671	0.6389	1.6660	2.7766	7.9939	13.3231
4	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.4191	0.5869	1.6660	2.7766	7.9939	13.3231
5	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.4783	0.5277	1.6660	2.7766	7.9939	13.3231
6	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.5460	0.4600	1.6660	2.7766	7.9939	13.3231
7	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.6232	0.3828	1.6660	2.7766	7.9939	13.3231
8	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.7114	0.2947	1.6660	2.7766	7.9939	13.3231
9	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.8120	0.1940	1.6660	2.7766	7.9939	13.3231
10	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	0.9268	0.0792	1.6660	2.7766	7.9939	13.3231
11	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
12	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
13	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
14	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
15	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
16	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
17	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
18	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
19	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
20	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
21	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
22	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
23	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
24	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
25	4.7811	0.4362	5.2173	0.1305	0.0900	0.0836	0.2830	0.0480	0.0248	-	-	0.6599	1.0999	6.3172	10.5286
Levelized Tariff (1-25Years)			**5.2173**	**0.1305**	**0.0900**	**0.0836**	**0.2830**	**0.0480**	**0.0248**	**0.3352**	**0.3458**	**1.3409**	**2.2349**	**7.4522**	**12.4203**

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Atlas Power Limited
Debt Servicing Schedule

Period	Local Debt					Annual Principal Repayment Rs./kW/ hr.	Annual Interest Rs./kW/ hr.	Annual Debt Servicing Rs./kW/ hr.
	Principal Million $	Repayment Million $	Mark-Up Million $	Balance Million $	Debt Service Millin $			
	168.32	2.05	5.66	166.26	7.7147			
	166.26	2.12	5.59	164.14	7.7147			
	164.14	2.20	5.52	161.94	7.7147			
	161.94	2.27	5.45	159.68	7.7147			
1	168.32	8.64	22.21	159.68	30.8587	0.2818	0.7242	1.0060
	159.68	2.35	5.37	157.33	7.7147			
	157.33	2.42	5.29	154.91	7.7147			
	154.91	2.51	5.21	152.40	7.7147			
	152.40	2.59	5.12	149.81	7.7147			
2	159.68	9.87	20.99	149.81	30.8587	0.3216	0.6844	1.0060
	149.81	2.68	5.04	147.13	7.7147			
	147.13	2.77	4.95	144.36	7.7147			
	144.36	2.86	4.85	141.50	7.7147			
	141.50	2.96	4.76	138.55	7.7147			
3	149.81	11.26	19.60	138.55	30.8587	0.3671	0.6389	1.0060
	138.55	3.06	4.66	135.49	7.7147			
	135.49	3.16	4.56	132.33	7.7147			
	132.33	3.26	4.45	129.07	7.7147			
	129.07	3.37	4.34	125.69	7.7147			
4	138.55	12.85	18.00	125.69	30.8587	0.4191	0.5869	1.0060
	125.69	3.49	4.23	122.21	7.7147			
	122.21	3.61	4.11	118.60	7.7147			
	118.60	3.73	3.99	114.87	7.7147			
	114.87	3.85	3.86	111.02	7.7147			
5	125.69	14.67	16.19	111.02	30.8587	0.4783	0.5277	1.0060
	111.02	3.98	3.73	107.04	7.7147			
	107.04	4.12	3.60	102.92	7.7147			
	102.92	4.25	3.46	98.67	7.7147			
	98.67	4.40	3.32	94.27	7.7147			
6	111.02	16.75	14.11	94.27	30.8587	0.5460	0.4600	1.0060
	94.27	4.54	3.17	89.73	7.7147			
	89.73	4.70	3.02	85.03	7.7147			
	85.03	4.86	2.86	80.18	7.7147			
	80.18	5.02	2.70	75.16	7.7147			
7	94.27	19.12	11.74	75.16	30.8587	0.6232	0.3828	1.0060
	75.16	5.19	2.53	69.97	7.7147			
	69.97	5.36	2.35	64.61	7.7147			
	64.61	5.54	2.17	59.06	7.7147			
	59.06	5.73	1.99	53.34	7.7147			
8	75.16	21.82	9.04	53.34	30.8587	0.7114	0.2947	1.0060
	53.34	5.92	1.79	47.41	7.7147			
	47.41	6.12	1.59	41.29	7.7147			
	41.29	6.33	1.39	34.97	7.7147			
	34.97	6.54	1.18	28.43	7.7147			
9	53.34	24.91	5.95	28.43	30.8587	0.8120	0.1940	1.0060
	28.43	6.76	0.96	21.67	7.7147			
	21.67	6.99	0.73	14.68	7.7147			
	14.68	7.22	0.49	7.46	7.7147			
	7.46	7.46	0.25	0.00	7.7147			
10	28.43	28.43	2.43	0.00	30.8587	0.9268	0.0792	1.0060