



**Registrar**

# **National Electric Power Regulatory Authority**

## **Islamic Republic of Pakistan**

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No. NEPRA/R/TRF-67/WARDA -2007/2020-22

April 19, 2007

**Subject: Decision of the Authority w.r.t. Motion for Leave for Review filed by WARDA Power Generation Private Ltd. (WARDA) on March 15, 2007 under Rule 16(6) of NEPRA (Tariff Standards and Procedure) Rules, 1998 (Case No. NEPRA/TRF-67/WARDA -2007)**

Dear Sir,

In continuation of this office letter No. NEPRA/TRF-67/WARDA-2007/1328-30 dated 06-03-2007 whereby determination of the Authority on WARDA Power Generation Private Ltd. was sent. Please find enclosed herewith the decision of the Authority along with Annexes-I & II (16 pages) in the matter of Motion filed by WARDA Power Generation Private Ltd. against Case No. NEPRA/TRF-67/WARDA-2007 on March 15, 2007.

2. Subsequent to the culmination of proceedings in the subject Motion for Leave for Review and the issuance/announcement of decision of the Authority alongwith Annexes-I & II (16 pages) 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) read with Rule 16(11) of the National Electric Power Regulatory Authority Tariff (Standards and Procedure) Rules, 1998.

3. Please be informed that the Reference Tariff earlier intimated vide para 95 of the Authority's determination dated March 06, 2007, stands revised to the extent as detailed in para-17 (11 pages) of the decision of the Authority on the subject motion along with Annexes-I & II (02 pages) needs to be notified in the official Gazette. The Order is reproduced for the purpose of clarity and is attached herewith.

DA/As above.

*(Signature)*  
19.04.07.  
(Mahjooab Ahmad Mirza)

Secretary  
Cabinet Division,  
Government of Pakistan  
Cabinet Secretariat  
Islamabad

CC:

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



**FINAL ORDER OF THE AUTHORITY**  
**IN CASE NO. NEPRA/TRF-67/WARDA-2007**  
**TO BE NOTIFIED IN THE OFFICIAL GAZETTE**

Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, WARDA Power Generation (Pvt.) Ltd. (WARDA) 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 WARDA for delivery of electricity to CPPA of NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:

**Reference Tariff**

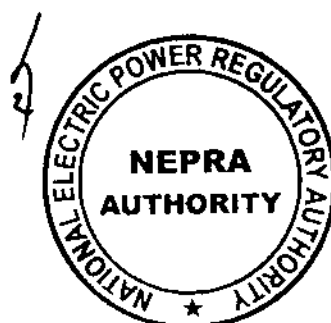
<b>Tariff Components</b>	<b>Year 1 to 10</b>	<b>Year 11 to 25</b>	<b>Indexation</b>
<b>Capacity Charge PKR/kW/Hour)</b>			
O&M Foreign	0.0673	0.0673	US\$ /PKR & US CPI
O&M Local	0.0673	0.0673	WPI
Cost of Working Capital	0.0900	0.0900	KIBOR
Insurance	0.0812	0.0812	US\$ /PKR
Debt Service – Foreign	0.5483	-	LIBOR
Debt Service – Local	0.2258	-	KIBOR
Return on Equity	0.3266	0.3266	NIL
ROE during Construction	0.0225	0.0225	NIL
<b>Total Capacity Charge</b>	<b>1.4290</b>	<b>0.6549</b>	
<b>Energy Charge on Operation on Furnace Oil Rs./kWh</b>			
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;

**I. Adjustment in EPC Cost (One Time)**

The Authority has assessed EPC cost as US\$ 169.217 out of which US\$150.0365 million would be in Euro and US\$19.1808 million in US Dollar. 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;

$$EPC_{(Adj.)} = US\$ 150.0365 \text{ Million} / 1.28 * E_{(PR)} + US\$ 19.1808 \text{ Million}$$

Where:

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

Note:- The adjustment on account of variation in Euro/US\$ parity in the relevant EPC cost would be allowed on the basis of EPC contract being finalized within 3 months of tariff determination. No adjustment in EPC cost shall be allowed beyond 15 months of financial close or 18 months of tariff determination whichever is earlier.

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:

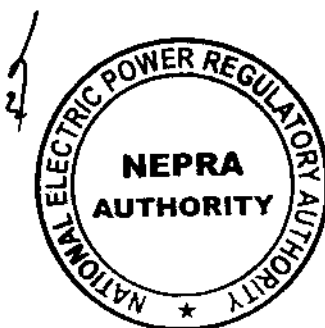
$Ins_{(Rev)}$  = Revised reference insurance component of tariff  
 $Ins_{(Ref)}$  = Reference insurance component of tariff as per original schedule of tariff  
 $EPC_{(Ref.)}$  = Reference EPC in US\$  
 $EPC_{(Adj.)}$  = Adjusted EPC in US\$  
 $P_{(Rev)}$  = Rupee to Dollar parity at COD

**ii) Return on Equity Adjustment Mechanism for EPC Cost Variation**

$$ROE_{(Rev)} = ROE_{(Ref)} / (30\% \times US\$198.074) \times (30\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

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**

$$ROEDC_{(Rev)} = 0.0900 / (US\$4.0858 \text{ Million}) \times (EDC_{(Rev)}) \times P_{(Rev)} / 61$$

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: 4.0858 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**

$$DSF_{(Rev)} = DSF_{(Ref)} / US\$103.989 \text{ Million} \times (70\% \times 75\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

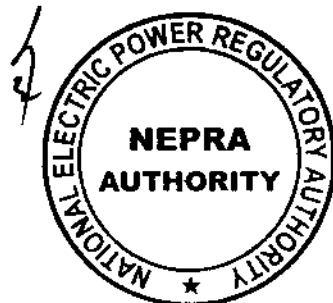
$$DSL_{(Rev)} = DSL_{(Ref)} / US\$34.663 \text{ Million} \times (70\% \times 25\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

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.

- $DSF_{(Rev)}$  = Revised Foreign Debt Servicing component of tariff
- $DSL_{(Rev)}$  = Revised Local Debt Servicing component of tariff
- $DSF_{(Ref)}$  = Reference Foreign Debt Servicing component of tariff as per original schedule of tariff
- $DSL_{(Ref)}$  = Reference Local 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 to be carried out for determination of contracted capacity. Adjustment shall not be made in the relevant tariff



components if IDC is established less than 196 MW net capacity at reference site conditions. The adjustments shall be made according to the following formula:

$$CC_{(Adj.)} = CC_{(Ref.)} / 196MW \times NC_{(IDC)}$$

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

Where;

CC<sub>(Adj)</sub> = Adjusted relevant Capacity Charge components of tariff  
CC<sub>(Ref)</sub> = Reference relevant Capacity Charge components of tariff  
NC<sub>(IDC)</sub> = 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 pressure	100 kPa
Ambient Temperature	35 °C
Altitude	200 m above sea level
Relative humidity	60%
Water Temperature to Charge air cooler	45 °C
Sum of exhaust gas back pressure and inlet pressure drop	5 kPa (not acc.to ISO 3046-1)

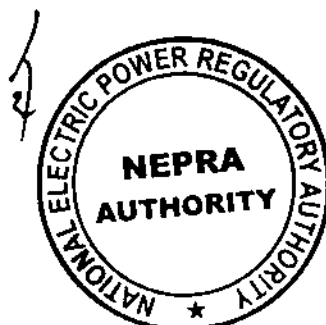
### III. Adjustment in Insurance as per actual

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 WARDA according to the following formula;

$$\text{Insurance (Rev)} = \text{AIC} / (1.35 \% \times \text{US\$169.217 Million}) * \text{AP}$$

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



**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.

WARDA 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\$ 7.847 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.

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

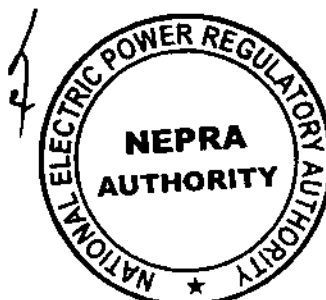
**VI. Adjustment for variation in Dollar/Rupee parity**

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 WARDA is obligated to pay any tax on its ROE, the exact amount paid by the company may be reimbursed by CPPA to WARDA 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, WARDA may also submit to CPPA details of any tax shield savings and CPPA will deduct the amount of these savings from its payment to WARDA 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 (Rs./kW/hour) spread over a 12 month according to the following formula:

$$\text{Withholding Tax Payable} = [ \{ 15\% * (E_{\text{(Ref)}} - E_{\text{(Red)}}) + \text{ROEDC}_{\text{(Ref)}} \} * 7.5\%$$



Where:

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

$E_{(Red)}$  = Equity Redeemed

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

Note:- ROE, ROEDC and withholding tax pertaining to the foreign equity shall be adjusted for variation in currency (Pakistani Rupee/US\$).

- 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 1<sup>st</sup> July, 1<sup>st</sup> October, 1<sup>st</sup> January and 1<sup>st</sup> April based on the latest available average quarterly 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:

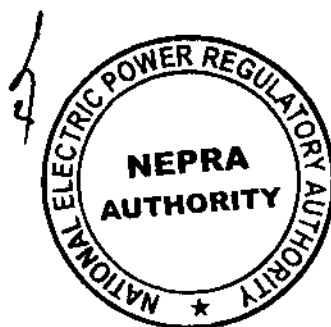
##### **i) Fixed O&M**

$$F O\&M_{(LREV)} = Rs. 0.0673/kW/Hour * WPI_{(REV)} / 118.96$$

$$F O\&M_{(FREV)} = Rs. 0.0673/kW/Hour * US CPI_{(REV)} / 202.41 * ER_{(REV)} / 61$$

Where:

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



$F O\&M_{(REV)}$	=	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:

$$V O\&M_{(REV)} = \text{Rs. } 0.4362 \text{ per kWh} * US CPI_{(REV)} / 202.41 * ER_{(REV)} / 61$$

Where:

$V O\&M_{(REV)}$	=	The revised applicable Variable O&M Component of Energy Charge indexed with US CPI and Exchange Rate variations.
$US CPI_{(REV)}$	=	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 Variable O&M indicated above shall be replaced with the revised number at COD after incorporating the required adjustment based upon the IDC Test.

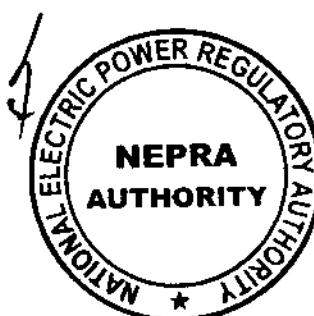
## iii) Adjustment for KIBOR/LIBOR variation

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 LIBOR and KIBOR according to the following formula;

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

$$\Delta I_{(F)} = P_{(FREY)} * (LIBOR_{(REV)} - 5.34\%) / 4$$

Where:





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

$\Delta I_{(F)}$  = the variation in interest charges on foreign loan applicable corresponding to variation in quarterly LIBOR.  $\Delta I$  can be positive or negative depending upon whether  $LIBOR_{(Rev)} >$  or  $<$  5.34%. The interest payment obligation will be enhanced or reduced to the extent of  $\Delta I$  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 1<sup>st</sup> 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:

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

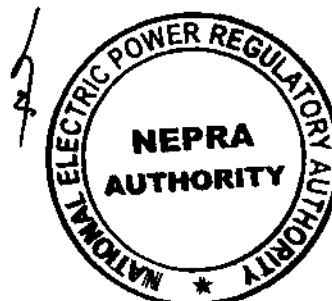
Where:

$FC_{(Rev)}$  = 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		
Crude Handling and Incidental charges (7.282% of C&F Price)*		
<b>Sub-Total – B</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)		
<b>Sub Total – E</b>		



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

- \* The supplier shall clearly indicate average Gross and Net calorific values of Arabian Gulf or any other source of which average reference fuel prices are used. Fuel supplier shall provide price adjustment mechanism due to variation in calorific value of the fuel being supplied to the IPP against the reference calorific values.
- \*\* Fuel supplier shall provide item wise actual incidental charges prevailing at the time of receiving payment for fuel supply. 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 NCPL.

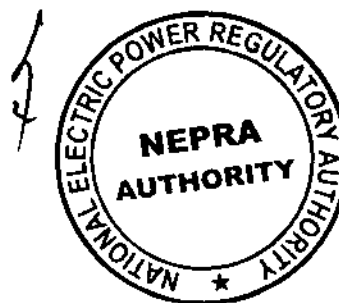
The fuel cost component will be adjusted after the commercial operation date, according to revision in RFO price on fortnightly basis as per above mechanism.

In case of any other arrangement laid down in the Fuel Supply Agreement (FSA) by PPIB mutually agreed by power producer and power purchaser shall be submitted to the Authority for approval.

Adjustment on account of local inflation, foreign inflation, foreign exchange rate variation, KIBOR/LIBOR variation and fuel price variation will be approved and announced by the Authority for immediate application within seven working days after receipt of petitioner'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.
- i) Dispatch criterion will be based on the Energy Charge.
- ii) Internal consumption (including air-cooled condenser) has been assumed to be approximately 4.1 MW.
- iii) 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.



- iv) Scheduled Outage periods per annum shall be in accordance with the 2006 standardized PPA.
- v) NTDC will be responsible for constructing the interconnection to the grid.
- vi) All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.
- vii) Tolerance in Dispatch shall be in accordance with 2006 standardized PPA.
- viii) If there is any change in any assumption that may lead to change in the tariff shall be referred to NEPRA for approval.
- ix) 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.

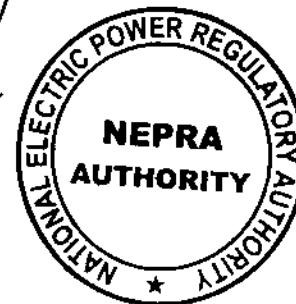
The above tariff and terms and conditions be incorporated in the Power Purchase Agreement between WARDA and CPPA.

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**Warda Power Generation (Private) 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	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.3110	0.4630	1.4551	2.4251	7.6424	12.5285
2	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.3413	0.4328	1.4551	2.4251	7.6424	12.5285
3	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.3747	0.3994	1.4551	2.4251	7.6424	12.5285
4	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.4115	0.3626	1.4551	2.4251	7.6424	12.5285
5	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.4521	0.3220	1.4551	2.4251	7.6424	12.5285
6	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.4969	0.2771	1.4551	2.4251	7.6424	12.5285
7	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.5465	0.2276	1.4551	2.4251	7.6424	12.5285
8	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.6013	0.1728	1.4551	2.4251	7.6424	12.5285
9	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.6618	0.1122	1.4551	2.4251	7.6424	12.5285
10	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.7289	0.0452	1.4551	2.4251	7.6424	12.5285
11	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
12	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
13	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
14	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
15	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
16	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
17	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
18	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
19	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
20	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
21	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
22	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
23	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
24	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
25	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
<b>Levelized Tariff (1-25Years)</b>			<b>5.2173</b>	<b>0.1346</b>	<b>0.0900</b>	<b>0.0812</b>	<b>0.3266</b>	<b>0.0225</b>	<b>0.0262</b>	<b>0.3097</b>	<b>0.2143</b>	<b>1.2050</b>	<b>2.0083</b>	<b>7.2256</b>	<b>11.8452</b>



**Warda Power Generation (Private) Limited**  
**Debt Servicing Schedule**

Period	Foreign Debt					Local Debt					Foreign Debt		Local Debt				
	Principal Million \$	Repayment Million \$	Mark-Up Million \$	Balance Million \$	Debt Service Million \$	Principal Million \$	Repayment Million \$	Mark-Up Million \$	Balance Million \$	Debt Service Million \$	Principal Repayment Rs./kW/ hr.	Interest Rs./kW/ hr.	Principal Repayment Rs./kW/ hr.	Interest Rs./kW/ hr.	Annual Principal Repayment Rs./kW/ hr.	Annual Interest Rs./kW/ hr.	Annual Debt Servicing Rs./kW/ hr.
1	103.99	1.69	2.17	102.30	3.86	34.66	0.42	1.17	34.24	1.5887	0.2478	0.3005	0.0632	0.1625	0.3110	0.4630	0.7741
	102.30	1.73	2.13	100.57	3.86	34.24	0.44	1.15	33.80	1.5887							
	100.57	1.76	2.10	98.81	3.86	33.80	0.45	1.14	33.35	1.5887							
	98.81	1.80	2.06	97.01	3.86	33.35	0.47	1.12	32.88	1.5887							
	93.99	6.97	8.46	97.01	15.43	34.66	1.78	4.57	32.88	6.3549							
	97.01	1.84	2.02	95.16	3.86	32.88	0.48	1.11	32.40	1.5887							
	95.16	1.87	1.98	93.30	3.86	32.40	0.50	1.09	31.90	1.5887							
	93.30	1.91	1.95	91.39	3.86	31.90	0.52	1.07	31.38	1.5887							
	91.39	1.95	1.91	89.44	3.86	31.38	0.53	1.06	30.85	1.5887							
	89.44	7.58	7.86	89.44	15.43	32.88	2.03	4.32	30.85	6.3549							
2	89.44	1.89	1.86	87.45	3.86	30.85	0.55	1.04	30.30	1.5887	0.2691	0.2792	0.0722	0.1536	0.3413	0.4328	0.7741
	87.45	2.04	1.82	85.41	3.86	30.30	0.57	1.02	29.73	1.5887							
	85.41	2.08	1.78	83.33	3.86	29.73	0.59	1.00	29.14	1.5887							
	83.33	2.12	1.74	81.21	3.86	29.14	0.61	0.98	28.53	1.5887							
	81.21	8.23	7.21	81.21	15.43	30.85	2.32	4.04	28.53	6.3549							
3	81.21	2.17	1.69	79.05	3.86	28.53	0.63	0.96	27.90	1.5887	0.2923	0.2960	0.0824	0.1434	0.3747	0.3994	0.7741
	79.05	2.21	1.65	76.84	3.86	27.90	0.65	0.94	27.25	1.5887							
	76.84	2.26	1.60	74.58	3.86	27.25	0.67	0.92	26.58	1.5887							
	74.58	2.30	1.56	72.28	3.86	26.58	0.69	0.89	25.88	1.5887							
	72.28	6.93	6.50	72.28	15.43	28.53	2.65	3.71	25.88	6.3549							
4	72.28	2.35	1.51	69.93	3.86	25.88	0.72	0.87	25.17	1.5887	0.3174	0.2309	0.0940	0.1317	0.4115	0.3626	0.7741
	69.93	2.40	1.46	67.53	3.86	25.17	0.74	0.85	24.42	1.5887							
	67.53	2.45	1.41	65.08	3.86	24.42	0.77	0.82	23.66	1.5887							
	65.08	2.50	1.36	62.57	3.86	23.66	0.79	0.80	22.86	1.5887							
	62.57	9.70	5.73	62.57	15.43	25.88	3.02	3.33	22.86	6.3549							
5	62.57	2.55	1.30	60.02	3.86	22.86	0.82	0.77	22.04	1.5887	0.3447	0.2056	0.1074	0.1184	0.4521	0.3220	0.7741
	60.02	2.61	1.25	57.41	3.86	22.04	0.85	0.74	21.20	1.5887							
	57.41	2.66	1.20	54.75	3.86	21.20	0.88	0.71	20.32	1.5887							
	54.75	2.72	1.14	52.04	3.86	20.32	0.91	0.68	19.41	1.5887							
	52.04	10.54	4.89	52.04	15.43	22.86	3.45	2.91	19.41	6.3549							
6	52.04	2.77	1.08	49.26	3.86	19.41	0.94	0.65	18.48	1.5887	0.3744	0.1739	0.1226	0.1032	0.4969	0.2771	0.7741
	49.26	2.83	1.03	46.43	3.86	18.48	0.97	0.62	17.51	1.5887							
	46.43	2.89	0.97	43.54	3.86	17.51	1.00	0.59	16.51	1.5887							
	43.54	2.95	0.91	40.59	3.86	16.51	1.03	0.56	15.48	1.5887							
	40.59	11.45	3.99	40.59	15.43	19.41	3.94	2.42	15.48	6.3549							
7	40.59	3.01	0.85	37.58	3.86	15.48	1.07	0.52	14.41	1.5887	0.4066	0.1417	0.1399	0.0859	0.5465	0.2276	0.7741
	37.58	3.07	0.78	34.50	3.86	14.41	1.10	0.48	13.30	1.5887							
	34.50	3.14	0.72	31.36	3.86	13.30	1.14	0.45	12.16	1.5887							
	31.36	3.20	0.65	28.16	3.86	12.16	1.18	0.41	10.98	1.5887							
	28.16	12.43	3.00	28.16	15.43	15.48	4.49	1.86	10.98	6.3549							
8	28.16	3.27	0.59	24.89	3.86	10.98	1.22	0.37	9.76	1.5887	0.4416	0.1067	0.1596	0.0661	0.6013	0.1728	0.7741
	24.89	3.34	0.52	21.55	3.86	9.76	1.26	0.33	8.50	1.5887							
	21.55	3.41	0.45	18.14	3.86	8.50	1.30	0.29	7.20	1.5887							
	18.14	3.48	0.38	14.66	3.86	7.20	1.35	0.24	5.85	1.5887							
	14.66	13.50	1.93	14.66	15.43	10.98	5.13	1.23	5.85	6.3549							
9	14.66	3.55	0.31	11.11	3.86	5.85	1.39	0.20	4.46	1.5887	0.4796	0.0687	0.1822	0.0435	0.6618	0.1122	0.7741
	11.11	3.63	0.23	7.45	3.86	4.46	1.44	0.15	3.02	1.5887							
	7.45	3.70	0.16	3.78	3.86	3.02	1.49	0.10	1.54	1.5887							
	3.78	3.78	0.08	0.00	3.86	1.54	1.54	0.05	0.00	1.5887							
	14.66	14.66	0.77	0.00	15.43	5.85	5.85	0.50	0.00	6.3549							
10											0.5209	0.0274	0.2080	0.0178	0.7289	0.0452	0.7741



**Decision of the Authority**  
**w.r.t. Motion for Leave for Review filed by WARDA Power Generation**  
**(Pvt.) Ltd. Under Rule 16(6) of Tariff Standard and Procedure Rules - 1998**

1. WARDA Power Generation (Pvt.) Ltd. filed motion for leave for review on 15.3.2007 against the Tariff determination dated 5.3.2007 in Case No. NEPRA/TRF-67/WARDA-2007. The following are the issues requiring review of the Authority;

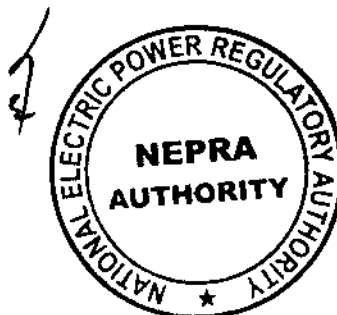
- EPC Cost;
- Mobilization Cost;
- Stamp Duties;
- Exchange Rates & Breakdown of total Project Cost Including Financing & IDC;
- Variable O&M;

2. The Authority accepted the motion for leave for review on March 21, 2007 and held hearing on March 28, 2007 in NEPRA's main office in order to provide an opportunity to the petitioner to present its case before the Authority. All parties to the proceedings were informed accordingly. The issue wise discussion and decisions are given in the following paragraphs;

**EPC Cost**

3. WARDA submitted that 88% of its EPC cost is comprised of its offshore portion amounting to Euros 117,216,000. NEPRA has multiplied this figure by the current exchange rate of US\$ 1.28=1Euro to arrive at an estimate in US\$, the resultant figure being US\$ 150,036,840. WARDA's letter dated February 7, 2007 also states that 12% of such EPC cost is its onshore portion and is payable to WARTSILA in Pakistani Rupees. WARDA requested NEPRA that same prevalent rate of US\$ 1.28=1Euro to arrive at the current estimate in US Dollars for this 12% component as well, and also allow adjustment in this 12% component of EPC Cost for currency fluctuation. According to WARDA this adjustment has been overlooked in paragraph 95 part I titled "Adjustment in EPC Cost (one Time)" on pages 39 and 40 of the Determination. According to WARDA, their request is in line with the determination for Attock Gen Limited (AGL) under case number NEPRA/TRF-55/AGL-2006 on page 23 & page 24 wherein it is stated that;

*"The equipment supplier is based in Europe and the company would make payment to the supplier in Euros therefore, the EPC cost should be linked to Euro/USD parity and the factor of 1.2 used for converting Euros to USD be adjusted accordingly to ascertain the actual EPC cost at COD. The argument given by the petitioner is reasonable and*



*therefore, accepted. The fixed EPC cost shall be adjusted according to the actual Euro-PKR exchange rate prevailing at the time of making payments to the supplier. AGL's final reference table shall be revised on COD to incorporate all the permissible adjustment during construction period."*

4. WARDA's request regarding indexation of onshore project cost with Dollar/Euro parity could not be justified. The Authority used conversion rate of 1.20 Dollar/Euro because the petitioner had used this conversion factor to translate local currency in equivalent Euro. The Authority understands that there are two parts of EPC contract, one offshore; which will be for plant and equipment and the other onshore which will be for infrastructure development and civil works. The Authority considers that the costs to be incurred in local currency cannot be adjusted for variation in Euro/Dollar parity. The Authority therefore decides not to alter its earlier decision in this context.

5. The Authority considers that under Part I of Paragraph 95 titled as the Adjustment in EPC Cost (One Time) the sentence "The adjustment would be allowed for a period of up to 3 months or up to financial close whichever is earlier" requires further clarification. The Authority has therefore decided to insert the following note under part I in paragraph 95 titled as Adjustment in EPC cost (One Time);

*"The adjustment on account of variation in Euro/US\$ parity in the relevant EPC cost would be allowed on the basis of EPC contract being finalized within 3 months of tariff determination. No adjustment in EPC cost shall be allowed beyond 15 months of financial close or 18 months of tariff determination whichever is earlier".*

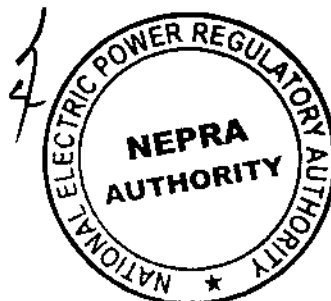
#### **Mobilization Costs**

6. WARDA submitted that it is unable to understand paragraph 55 of the Determination because NEPRA separately allowed the emergency spare parts that are not included in EPC costs. Import duties and taxes are accordingly payable on the cost of such emergency spare parts and, therefore, WARDA requested that these should be included in WARDA's mobilization costs.

7. The Authority while allowing cost of spares clearly mentioned that the cost of spare parts was inclusive of duties & taxes; therefore no separate provision on this account was justified. The Authority has therefore decides to maintain its earlier decision in this context.

#### **Structure Fees & Development Costs (SBL retainer & Engineering costs)**

8. According to WARDA development costs pertaining to Standard Bank, their letter dated March 1, 2007 has been provided to NEPRA, confirming a retainer of US\$ 20,000 per month and



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listing the banks various fees. If NEPRA does not accept as valid the contents of Standard Bank's letter dated March 1, 2007 wherein structure fees have also been specified, Standard Bank would be unable to arrange financing for our project and WARDA would, regrettably, have to withdraw there from. According to WARDA they also provided justification of engineering costs of US\$ 750,000 that inter alia cover: embankment design, fencing, environmental design, parking, access roads and piling in their presentation before NEPRA on March 1, 2007. WARDA requested that the foregoing costs may therefore be allowed.

9. The Authority considers that WARDA has not provided any new grounds and its concerns have already been considered in the original determination. The Authority therefore decides not to alter its earlier decision.

#### **Stamp Duties**

10. WARDA submitted that Stamp Duties has to be paid to the Government of Pakistan as part of its revenue requirements and cannot be mixed with financing fees payable to private banks therefore the amount of stamp duties, whatever they may be, should kindly be considered at actual.

11. The Authority considered WARDA's request and decided to allow the stamp duties as per actual.

#### **Exchange Rates & breakdown of total project cost including financing & IDC**

12. WARDA has requested that the exact exchange rates used by NEPRA to calculate all of the capacity and energy components of the tariff may kindly be conveyed to WARDA, so that these are easily available for reference in the Determination. At this time these do not appear to be explicitly stated in the Determination. According to WARDA there is no itemized breakdown of total project cost by heading, which may be provided.

13. The Authority understands that all the information requested by WARDA is available in the determination. WARDA was also given soft copy of the model and all cost details are available therein.

#### **Variable O&M**

14. WARDA submitted that the figure of Variable O&M of €6.15 / MWh was very much final and firm. NEPRA decided otherwise and reduced the same to €5.9585 / MWh. WARDA



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accepted NEPRA's reduced figure of Euros 5.9585 MWh but under no circumstances can a conversion (at the old exchange rate US\$ 1.20=1Euro) and moreover its FIXATION in Rupees without allowing any adjustments for currency fluctuations until COD be feasible for WARDA. According to WARDA O&M contract has not been signed and no financial close has taken place yet and in spite of these circumstances, NEPRA is presently fixing the Rupee value through the old conversion rate of 1€=\$1.2. WARDA requested NEPRA to convert the reduced figure of Euros 5.9585 at prevalent Euro/ Rupee rate of Rupees 80=1€ to arrive at:

Lubricants €1.2676 per MWh x 80 = Rs 0.1014 per kWh.

Variable O&M €4.6909 per MWh x 80=Rs0.3753 per kWh.

15. According to WARDA at COD the tariff table can be corrected/adjusted for the Euro/Rupee/Dollar fluctuation that has taken place up to COD (from the reference figure of 1€=Rs 80 and 1\$=Rs 61) the US Dollar figure determined and thereafter WARDA be allowed Rupee/Dollar variation and indexation with US CPI to enable WARDA to proceed with its project in accordance with the NEPRA determination for AGL as defined on page 38 of the AGL determination where adjustments have been allowed for the revised US Dollar Rate vs Pak Rupees.

16. The Authority has considered WARDA's request for conversion of variable O&M costs of Euro 4.6909/MWh with US\$/Euro parity of 1.28 with reference to variable O&M allowed in the case of AGL. In the instant case the adjustment for US\$/Euro parity as requested by WARDA is not relevant. Even after application of same indexation to the Attock case, the allowed variable O&M is comparable; therefore the request for revision in this context is not accepted.

#### **Final Order**

17. Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, WARDA Power Generation (Pvt.) Ltd. (WARDA) 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 WARDA for delivery of electricity to CPPA of NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:



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**Reference Tariff**

Tariff Components	Year 1 to 10	Year 11 to 25	Indexation
<b>Capacity Charge PKR/kW/Hour)</b>			
O&M Foreign	0.0673	0.0673	US\$ /PKR & US CPI
O&M Local	0.0673	0.0673	WPI
Cost of Working Capital	0.0900	0.0900	KIBOR
Insurance	0.0812	0.0812	US\$ /PKR
Debt Service – Foreign	0.5483	-	LIBOR
Debt Service – Local	0.2258	-	KIBOR
Return on Equity	0.3266	0.3266	NIL
ROE during Construction	0.0225	0.0225	NIL
<b>Total Capacity Charge</b>	<b>1.4290</b>	<b>0.6549</b>	
<b>Energy Charge on Operation on Furnace Oil Rs./kWh</b>			
Fuel Cost Component	4.7811	4.7811	Fuel Price
Variable O&M	0.4362	0.4362	US\$ /PKR & US CPI

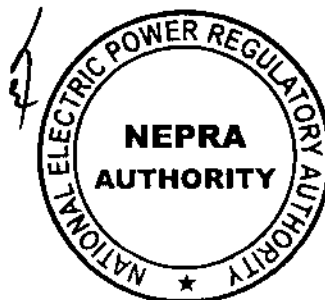
- Note: i) Capacity Charge Rs./kW/hour applicable to dependable capacity at the delivery point.  
ii) Dispatch criterion will be Energy Charge.  
iii) The above tariff is applicable for a period of 25 years commencing from the date of the Commercial Operation.  
iv) Component wise tariff for operation on RFO is indicated at Annex-I.

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

**I. Adjustment in EPC Cost (One Time)**

The Authority has assessed EPC cost as US\$ 169.217 out of which US\$150.0365 million would be in Euro and US\$19.1808 million in US Dollar. 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;

$$EPC_{(Adj.)} = US\$ 150.0365 \text{ Million} / 1.28 * E_{(PR)} + US\$ 19.1808 \text{ Million}$$



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Where:

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

Note:- The adjustment on account of variation in Euro/US\$ parity in the relevant EPC cost would be allowed on the basis of EPC contract being finalized within 3 months of tariff determination. No adjustment in EPC cost shall be allowed beyond 15 months of financial close or 18 months of tariff determination whichever is earlier.

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

ii) **Return on Equity Adjustment Mechanism for EPC Cost Variation**

$$ROE_{(Rev)} = ROE_{(Ref)} / (30\% \times US\$198.074) \times (30\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

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

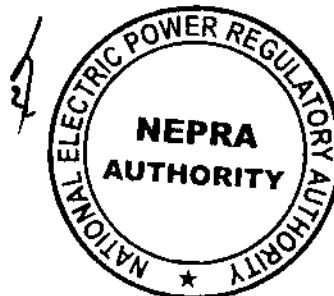
$P_{(Rev)}$  = Rupee to Dollar parity at COD

iii) **ROEDC Adjustment Mechanism for EPC Cost Variation**

$$ROEDC_{(Rev)} = 0.0900 / (US\$4.0858 \text{ Million}) \times (EDC_{(Rev)}) \times P_{(Rev)} / 61$$

Where:

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



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

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

Note: 4.0858 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**

$$DSF_{(Rev)} = DSF_{(Ref)} / US\$103.989 \text{ Million} \times (70\% \times 75\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

$$DSL_{(Rev)} = DSL_{(Ref)} / US\$34.663 \text{ Million} \times (70\% \times 25\% \times PC_{(Rev)}) \times P_{(Rev)} / 61$$

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.

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

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

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

$DSL_{(Ref)}$  = Reference Local 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 to be carried out for determination of contracted capacity. Adjustment shall not be made in the relevant tariff components if IDC is established less than 196 MW net capacity at reference site conditions. The adjustments shall be made according to the following formula:

$$CC_{(Adj.)} = CC_{(Ref)} / 196 \text{ MW} \times NC_{(IDC)}$$

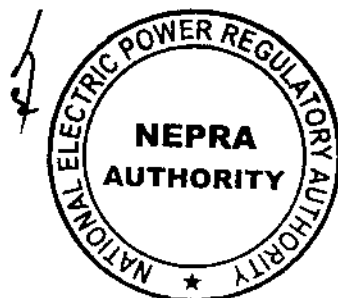
Note: Above formula shall be applicable to all the individual relevant components of Capacity Charges.

Where;

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

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

$NC_{(IDC)}$  = Net Capacity at reference site conditions established at the time of IDC test



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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 pressure	100 kPa
Ambient Temperature	35 °C
Altitude	200 m above sea level
Relative humidity	60%
Water Temperature to Charge air cooler	45 °C
Sum of exhaust gas back pressure and inlet pressure drop	5 kPa (not acc.to ISO 3046-1)

**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 WARDA according to the following formula;

$$\text{Insurance (Rev)} = \text{AIC} / (1.35 \% \times \text{US\$169.217 Million}) * \text{AP}$$

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

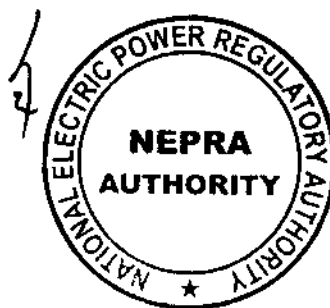
**IV. Adjustment Based on Actual Interest During Construction**

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.

WARDA 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\$ 7.847 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.



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WARDA 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 WARDA is obligated to pay any tax on its ROE, the exact amount paid by the company may be reimbursed by CPPA to WARDA 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, WARDA may also submit to CPPA details of any tax shield savings and CPPA will deduct the amount of these savings from its payment to WARDA 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 (Rs./kW/hour) spread over a 12 month according to the following formula:

$$\text{Withholding Tax Payable} = [\{15\% * (E(\text{Ref}) - E(\text{Red}))\} + \text{ROEDC}(\text{Ref})] * 7.5\%$$

Where:

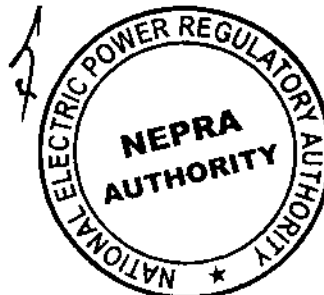
$E(\text{Ref})$  = Adjusted Reference Equity at COD

$E(\text{Red})$  = Equity Redeemed

$\text{ROEDC}(\text{Ref})$  = Reference Return on Equity During Construction

Note:- ROE, ROEDC and withholding tax pertaining to the foreign equity shall be adjusted for variation in currency (Pakistani Rupee/US\$).

- 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.



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### 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 1<sup>st</sup> July, 1<sup>st</sup> October, 1<sup>st</sup> January and 1<sup>st</sup> April based on the latest available average quarterly 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

$$F O\&M_{(LREV)} = \text{Rs. } 0.0673/\text{kW/Hour} * WPI_{(REV)} / 118.96$$

$$F O\&M_{(FREX)} = \text{Rs. } 0.0673/\text{kW/Hour} * US CPI_{(REV)} / 202.41 * ER_{(REV)} / 61$$

Where:

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

$F O\&M_{(FREX)}$  = 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.



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ii) **Variable O&M**

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

$$V O\&M_{(REV)} = \text{Rs. } 0.4362 \text{ per kWh} * US CPI_{(REV)}/202.41 * ER_{(REV)}/61$$

Where:

$V O\&M_{(REV)}$  = The revised applicable Variable O&M Component of Energy Charge indexed with US CPI and Exchange Rate variations.

$US CPI_{(REV)}$  = 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 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/LIBOR 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 LIBOR and KIBOR according to the following formula;

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

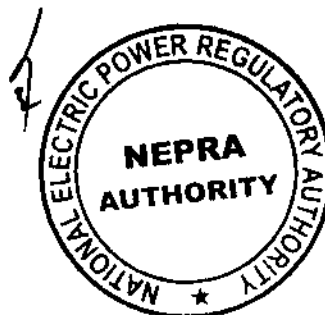
$$\Delta I_{(F)} = P_{(FREY)} * (LIBOR_{(REV)} - 5.34\%) / 4$$

Where:

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

$\Delta I_{(F)}$  = the variation in interest charges on foreign loan applicable corresponding to variation in quarterly LIBOR.  $\Delta I$  can be positive or negative depending upon whether  $LIBOR_{(REV)} >$  or  $<$  5.34%. The interest payment obligation will be enhanced or reduced to the extent of  $\Delta I$  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 1<sup>st</sup> 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

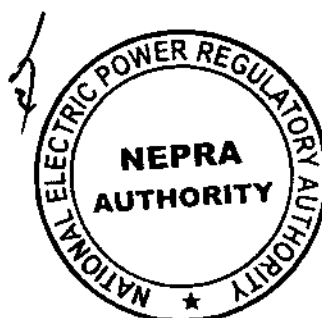
$FP_{(Rev)}$  = The new price of RFO per Metric Ton adjusted for NHV/GHV factor of 1.05 as per the following mechanism;

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		
Crude Handling and Incidental charges (7.282% of C&F Price)*		
<b>Sub-Total – B</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)		
<b>Cost of RFO excluding GST (GHV)</b>		
<b>Inland Freight</b>		
<b>Total Cost of RFO excluding GST (GHV)</b>		

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

\* The supplier shall clearly indicate average Gross and Net calorific values of Arabian Gulf or any other source of which average reference fuel prices are used. Fuel supplier shall provide price adjustment mechanism due to variation in calorific value of the fuel being supplied to the IPP against the reference calorific values.

\*\* Fuel supplier shall provide item wise actual incidental charges prevailing at the time of receiving payment for fuel supply. This charge shall vary with market supply/demand position



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but shall not exceed 8% of C&F price, to be uniformly charged to all customers including NCPL.

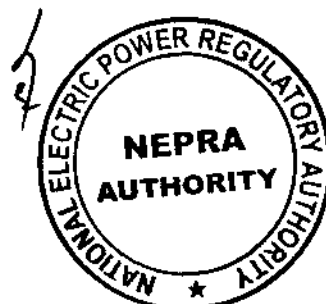
The fuel cost component will be adjusted after the commercial operation date, according to revision in RFO price on fortnightly basis as per above mechanism.

In case of any other arrangement laid down in the Fuel Supply Agreement (FSA) by PPIB mutually agreed by power producer and power purchaser shall be submitted to the Authority for approval.

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

**IX. Terms and Conditions of Tariff:**

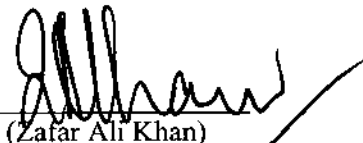
- i) The plant availability shall be 90%.
- ii) All new equipment will be installed and the plant will be of standard configuration.
- i) Dispatch criterion will be based on the Energy Charge.
- ii) Internal consumption (including air-cooled condenser) has been assumed to be approximately 4.1 MW.
- iii) 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.
- iv) Scheduled Outage periods per annum shall be in accordance with the 2006 standardized PPA.
- v) NTDC will be responsible for constructing the interconnection to the grid.
- vi) All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.
- vii) Tolerance in Dispatch shall be in accordance with 2006 standardized PPA.
- viii) If there is any change in any assumption that may lead to change in the tariff shall be referred to NEPRA for approval.

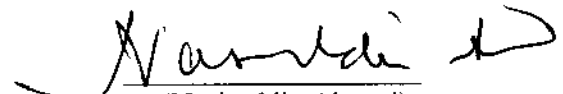


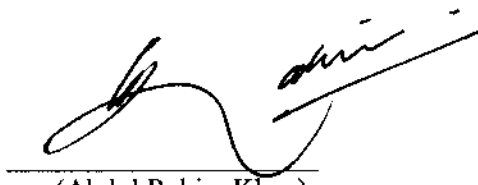
- ix) If IPP is required by the power purchaser to deliver power above 132 kV, any additional cost to be incurred by the IPP submitted to NEPRA for adjustment. The adjustment request by the IPP shall be duly verified by the power purchaser.

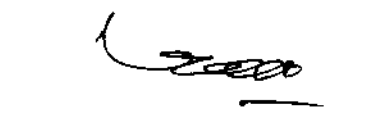
The above tariff and terms and conditions be incorporated in the Power Purchase Agreement between WARDA and CPPA.

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(Zafar Ali Khan)  
Member

  
(Nasiruddin Ahmed)  
Member

  
(Abdul Rahim Khan)  
Member

  
Lt. General (R) Saced uz Zafar  
Chairman





**Warda Power Generation (Private) 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	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.3110	0.4630	1.4551	2.4251	7.6424	12.5285
2	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.3413	0.4328	1.4551	2.4251	7.6424	12.5285
3	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.3747	0.3994	1.4551	2.4251	7.6424	12.5285
4	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.4115	0.3626	1.4551	2.4251	7.6424	12.5285
5	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.4521	0.3220	1.4551	2.4251	7.6424	12.5285
6	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.4969	0.2771	1.4551	2.4251	7.6424	12.5285
7	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.5465	0.2276	1.4551	2.4251	7.6424	12.5285
8	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.6013	0.1728	1.4551	2.4251	7.6424	12.5285
9	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.6618	0.1122	1.4551	2.4251	7.6424	12.5285
10	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	0.7289	0.0452	1.4551	2.4251	7.6424	12.5285
11	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
12	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
13	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
14	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
15	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
16	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
17	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
18	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
19	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
20	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
21	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
22	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
23	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
24	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
25	4.7811	0.4362	5.2173	0.1346	0.0900	0.0812	0.3266	0.0225	0.0262	-	-	0.6810	1.1350	6.3522	10.4135
<b>Levelized Tariff (1-25Years)</b>			<b>5.2173</b>	<b>0.1346</b>	<b>0.0900</b>	<b>0.0812</b>	<b>0.3266</b>	<b>0.0225</b>	<b>0.0262</b>	<b>0.3097</b>	<b>0.2143</b>	<b>1.2050</b>	<b>2.0083</b>	<b>7.2256</b>	<b>11.8452</b>



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**Warda Power Generation (Private) Limited**  
**Debt Servicing Schedule**

Period	Foreign Debt					Local Debt					Foreign Debt		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 Million \$	Principal Million \$	Repayment Million \$	Mark-Up Million \$	Balance Million \$	Debt Service Million \$	Principal Repayment Rs./kW/ hr.	Interest Rs./kW/ hr.	Principal Repayment Rs./kW/ hr.	Interest Rs./kW/ hr.			
1	103.99	1.69	2.17	102.30	3.86	34.66	0.42	1.17	34.24	1.5887	0.2478	0.3005	0.0632	0.1625	0.3110	0.4630	0.7741
	102.30	1.73	2.13	100.57	3.86	34.24	0.44	1.15	33.80	1.5887							
	100.57	1.76	2.10	98.81	3.86	33.80	0.45	1.14	33.35	1.5887							
	98.81	1.80	2.06	97.01	3.86	33.35	0.47	1.12	32.88	1.5887							
	103.99	6.97	8.46	97.01	15.43	34.66	1.78	4.57	32.88	6.3549							
2	97.01	1.84	2.02	95.18	3.86	32.88	0.48	1.11	32.40	1.5887	0.2691	0.2792	0.0722	0.1536	0.3413	0.4328	0.7741
	95.18	1.87	1.98	93.30	3.86	32.40	0.50	1.09	31.90	1.5887							
	93.30	1.91	1.95	91.39	3.86	31.90	0.52	1.07	31.38	1.5887							
	91.39	1.95	1.91	89.44	3.86	31.38	0.53	1.06	30.85	1.5887							
	97.01	7.56	7.86	89.44	15.43	32.88	2.03	4.32	30.85	6.3549							
3	89.44	1.99	1.86	87.45	3.86	30.85	0.55	1.04	30.30	1.5887	0.2923	0.2560	0.0824	0.1434	0.3747	0.3994	0.7741
	87.45	2.04	1.82	85.41	3.86	30.30	0.57	1.02	29.73	1.5887							
	85.41	2.08	1.78	83.33	3.86	29.73	0.59	1.00	29.14	1.5887							
	83.33	2.12	1.74	81.21	3.86	29.14	0.61	0.98	28.53	1.5887							
	89.44	8.23	7.21	81.21	15.43	30.85	2.32	4.04	28.53	6.3549							
4	81.21	2.17	1.69	79.05	3.86	28.53	0.63	0.96	27.90	1.5887	0.3174	0.2309	0.0940	0.1317	0.4115	0.3626	0.7741
	79.05	2.21	1.65	76.84	3.86	27.90	0.65	0.94	27.25	1.5887							
	76.84	2.26	1.60	74.58	3.86	27.25	0.67	0.92	26.58	1.5887							
	74.58	2.30	1.56	72.28	3.86	26.58	0.69	0.89	25.88	1.5887							
	81.21	8.93	6.50	72.28	15.43	28.53	2.65	3.71	25.88	6.3549							
5	72.28	2.35	1.51	69.93	3.86	25.88	0.72	0.87	25.17	1.5887	0.3447	0.2036	0.1074	0.1184	0.4521	0.3220	0.7741
	69.93	2.40	1.46	67.53	3.86	25.17	0.74	0.85	24.42	1.5887							
	67.53	2.45	1.41	65.08	3.86	24.42	0.77	0.82	23.66	1.5887							
	65.08	2.50	1.36	62.57	3.86	23.66	0.79	0.80	22.86	1.5887							
	72.28	9.70	5.73	62.57	15.43	25.88	3.02	3.33	22.86	6.3549							
6	62.57	2.55	1.30	60.02	3.86	22.86	0.82	0.77	22.04	1.5887	0.3744	0.1739	0.1225	0.1032	0.4969	0.2771	0.7741
	60.02	2.61	1.25	57.41	3.86	22.04	0.85	0.74	21.20	1.5887							
	57.41	2.66	1.20	54.75	3.86	21.20	0.88	0.71	20.32	1.5887							
	54.75	2.72	1.14	52.04	3.86	20.32	0.91	0.68	19.41	1.5887							
	62.57	10.54	4.89	52.04	15.43	22.86	3.45	2.91	19.41	6.3549							
7	52.04	2.77	1.08	49.26	3.86	19.41	0.94	0.65	18.48	1.5887	0.4066	0.1417	0.1399	0.0859	0.5465	0.2276	0.7741
	49.26	2.83	1.03	46.43	3.86	18.48	0.97	0.62	17.51	1.5887							
	46.43	2.89	0.97	43.54	3.86	17.51	1.00	0.59	16.51	1.5887							
	43.54	2.95	0.91	40.59	3.86	16.51	1.03	0.56	15.48	1.5887							
	52.04	11.45	3.99	40.59	15.43	19.41	3.94	2.42	15.48	6.3549							
8	40.59	3.01	0.85	37.58	3.86	15.48	1.07	0.52	14.41	1.5887	0.4416	0.1067	0.1596	0.0661	0.6013	0.1728	0.7741
	37.58	3.07	0.78	34.50	3.86	14.41	1.10	0.48	13.30	1.5887							
	34.50	3.14	0.72	31.36	3.86	13.30	1.14	0.45	12.16	1.5887							
	31.36	3.20	0.65	28.16	3.86	12.16	1.18	0.41	10.98	1.5887							
	40.59	12.43	3.00	28.16	15.43	15.48	4.49	1.86	10.98	6.3549							
9	28.16	3.27	0.59	24.89	3.86	10.98	1.22	0.37	9.76	1.5887	0.4796	0.0687	0.1822	0.0435	0.6618	0.1122	0.7741
	24.89	3.34	0.52	21.55	3.86	9.76	1.26	0.33	8.50	1.5887							
	21.55	3.41	0.45	18.14	3.86	8.50	1.30	0.29	7.20	1.5887							
	18.14	3.48	0.38	14.66	3.86	7.20	1.35	0.24	5.85	1.5887							
	28.16	13.50	1.93	14.66	15.43	10.98	5.13	1.23	5.85	6.3549							
10	14.66	3.55	0.31	11.11	3.86	5.85	1.39	0.20	4.46	1.5887	0.5209	0.0274	0.2080	0.0178	0.7289	0.0452	0.7741
	11.11	3.63	0.23	7.48	3.86	4.46	1.44	0.15	3.02	1.5887							
	7.48	3.70	0.16	3.78	3.86	3.02	1.49	0.10	1.54	1.5887							
	3.78	3.78	0.08	0.00	3.86	1.54	1.54	0.05	0.00	1.5887							
	14.66	14.66	0.77	0.00	15.43	5.85	5.85	0.50	0.00	6.3549							

