



# National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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**Registrar**

No.NEPRA/R/TRF-68/APL-2007/3394-3396

May 19, 2010

Subject: **Decision of the Authority in the Matter of Tariff Adjustment with respect to Atlas Power Ltd. Tariff at Commercial Operation Date (COD) [Case # 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 Annexure-1 & 2 (10 pages) in Case No. NEPRA/TRF-68/APL-2007.

2. The decision is being intimated to the Federal Government for the purpose of notification 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 based on decision of the Authority, the Order of the Authority relating to the reference tariff, adjustments & indexation along with Annex-1 & 2 (08 pages) needs to be notified in the official gazette. The same is attached herewith for the purpose of clarity.

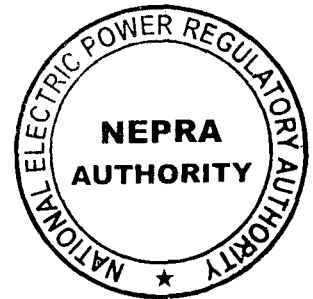
Enclosure: As above

Secretary  
Ministry of Water & Power  
'A' Block, Pak Secretariat  
Islamabad

( Syed Safeer Hussain )

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, 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 16(11) of the NEPRA Licensing (Generation) Rules, Atlas Power Ltd. (APL) is allowed to charge, on the basis of revised net dependable capacity established on the basis of test jointly carried out by the Central Power Purchasing Agency (CPPA) of the National Transmission and Dispatch Company (NTDC) and APL at the time of Commercial Operation Date (COD), the following is approved as specified tariff for APL for delivery of electricity to the CPPA of the NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:

**REFERENCE TARIFF**

| Tariff Components                    | Year 1 to 10  | Year 11 to 25 | Indexation        |
|--------------------------------------|---------------|---------------|-------------------|
| <b>Capacity Charge (PKR/kW/Hour)</b> |               |               |                   |
| Fixed O&M - Foreign                  | 0.0962        | 0.0962        | US\$/PKR & US CPI |
| - Local                              | 0.0796        | 0.0796        | WPI               |
| Insurance                            | 0.1258        | 0.1258        | US\$/PKR          |
| Working Capital                      | 0.1970        | 0.1970        | KIBOR             |
| Debt Service                         | 1.4734        | -             | KIBOR             |
| Return on Equity                     | 0.4312        | 0.4312        | US\$/PKR          |
| ROE during Construction              | 0.0464        | 0.0464        | US\$/PKR          |
| <b>Total Capacity Charge</b>         | <b>2.4496</b> | <b>0.9762</b> |                   |
| <b>Energy Charge Rs./kWh</b>         |               |               |                   |
| Fuel Cost Component                  | 8.9793        | 8.9793        | Fuel price        |
| Variable O&M:                        |               |               |                   |
| - Foreign                            | 0.5075        | 0.5075        | US\$/PKR & US CPI |
| - Local                              | 0.1134        | 0.1134        | WPI               |

Note:

- i) Capacity Charge Rs./kW/hour is applicable to dependable capacity at the delivery point.
- ii) Dispatch criterion will be the 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 is indicated at **Annex-I** and Debt Service Schedule at **Annex-II**.





I) **Adjustment in Insurance Component**

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 Component (Revised) = Rs.0.1258 per kW per Hour/ (1.35% x US\$ 202.07 Million) \* AP

Where;

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

II) **Pass-Through Items**

No provision for income tax has been accounted for in the tariff. If APL is obligated to pay any tax on its income, the exact amount paid by the company may be reimbursed by NTDC to APL on production of original receipts. This payment may be considered as pass-through (as Rs./kW/Hour) monthly 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 NTDC details of any tax shield savings and NTDC may deduct the amount of these savings from its payment to APL on account of taxation.

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. Withholding tax shall be allowed @7.5% (or applicable rate) of the return on equity. CPPA (NTDC) shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% (or applicable rate) of 15% of the equity and ROEDC.

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 as a pass through from the Power Purchaser in future on the basis of the total dividend pay out.

III) **Indexations**

The following indexations shall be applicable to reference tariff.



a) **Indexation applicable to O&M**

In future Fixed O&M part of Capacity Charge will be adjusted on account of local Inflation (WPI) and 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 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**

$$F O\&M_{(LREV)} = \text{Rs. } 0.0796 \text{ per kW per Hour} * WPI_{(REV)} / 145.36$$

$$F O\&M_{(FREV)} = \text{Rs. } 0.0962 \text{ per kW per hour} * US CPI_{(REV)} / 216.330 * ER_{(REV)} / 84.35$$

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 (Manufacturers)

$WPI_{(REF)}$  = 145.36, Wholesale Price Index (Manufacturers) of October 2009 notified by Federal Bureau of Statistics

$US CPI_{(REV)}$  = The revised US CPI (All Urban Consumers)

$US CPI_{(REF)}$  = 216.33, US CPI (All Urban Consumers) for the month of November 2009 as notified by the US Bureau of Labor Statistics

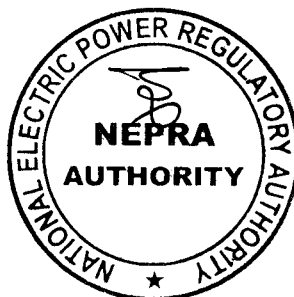
$ER_{(REV)}$  = The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

ii) **Variable O&M**

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

$$V O\&M_{(LREV)} = \text{Rs. } 0.1134 \text{ per kW per Hour} * WPI_{(REV)} / 145.36$$

$$V O\&M_{(FREV)} = \text{Rs. } 0.5075 \text{ per kW per hour} * US CPI_{(REV)} / 216.33 * ER_{(REV)} / 84.35$$



Where:

|                   |   |                                                                                                                             |
|-------------------|---|-----------------------------------------------------------------------------------------------------------------------------|
| $V O\&M_{(LREV)}$ | = | The revised applicable Variable O&M Local Component of the Energy Charge indexed with WPI                                   |
| $V O\&M_{(FREV)}$ | = | The revised applicable Variable O&M Foreign Component of the Energy Charge indexed with US CPI and Exchange rate variations |
| $WPI_{(REV)}$     | = | The revised wholesale Price Index (Manufacturers)                                                                           |
| $WPI_{(REF)}$     | = | 145.36 Wholesale Price Index (Manufacturers) of October 2009 notified by Federal Bureau of Statistics                       |
| $US\ CPI_{(REV)}$ | = | The revised US CPI (All Urban Consumers)                                                                                    |
| $US\ CPI_{(REF)}$ | = | 216.33 US CPI (All Urban Consumers) for the month of November 2009 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                                  |

iii) Adjustment for KIBOR variation

The interest part of fixed charge component will remain unchanged throughout the term except for the quarterly adjustment due to variations in interest rate as a result of variation in 3-monthly KIBOR according to the following formula:

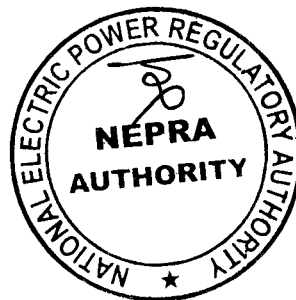
$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 12.40) / 4$$

Where:

|             |   |                                                                                                                                                                                                                                                                                                                           |
|-------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\Delta I$  | = | The variation in interest charges applicable corresponding to variation in KIBOR. $\Delta I$ can be positive or negative depending upon whether KIBOR REV is > or < 12.40%. The interest payment obligation will be enhanced or reduced to the extent of $\Delta I$ for each quarter under adjustment on quarterly basis. |
| $P_{(REV)}$ | = | 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 Energy Charge Part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations as and when notified by the relevant authority, which in





the instant case is Pakistan State Oil Company Ltd (PSO). In this regard, the variation in APL's allowed rate relating to fuel cost shall be revised according to the following formula:

$$FC_{(Rev)} = (\text{Rs. 8.9793 per kWh} * FP_{(Rev)}) / \text{Rs. 45,656.08 per M.Ton}$$

Where:

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

$$FP_{(Rev)} = \text{The new price of RFO as determined per price mechanism given at Para 100 VIII (a) (iv) of the original determination of APL and as per decision of the Authority dated January 15, 2010 (communicated vide letter No. NEPRA/TRF-68/APL - 2007 / 248-250 dated January 15, 2010)}$$

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.

#### IV) Adjustment in Return on Equity (ROE)

ROE component of tariff will be adjusted subject to exchange rate variation according to the following formula;

$$ROE_{(Rev)} = \text{Rs.0.4312 per kW per hour} * ER_{(Rev)} / ER_{(Ref)}$$

Where:

$$ROE_{(Rev)} = \text{The revised ROE component of the Capacity Purchase Price}$$

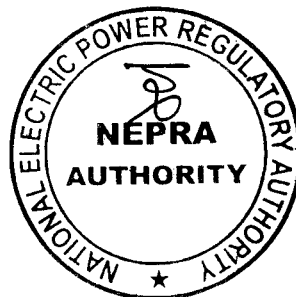
$$ER_{(Rev)} = \text{The revised TT \& OD selling rate of US\$ as notified by the National Bank of Pakistan}$$

$$ER_{(Ref)} = \text{The reference exchanges rate of PKR 84.35 = 1 US\$}.$$

#### V) Adjustment on Return on Equity during Construction (ROEDC)

ROEOC component of tariff will be adjusted subject to exchange rate variation according to the following formula;

$$ROEDC_{(Rev)} = \text{Rs.0.0464 per kW per Hour} * ER_{(Rev)} / ER_{(Ref)}$$





Where:

- ROEDC<sub>(Rev)</sub> = The revised ROEDC component of the Capacity Purchase Price  
ER<sub>(Rev)</sub> = The revised TT & OD selling rate of US\$ as notified by the  
National Bank of Pakistan  
ER<sub>(Ref)</sub> = The reference exchanges rate of PKR 84.35 = 1 US\$.

**VI) Adjustment on Account of Financing Cost of Working Capital:**

10.1 According to Para 100 of the determination, cost of working capital is subject to the KIBOR indexation. Whereas, as per Para 100 VIII (a) (iii) of the determination adjustment on account of 3-month KIBOR variation shall be adjusted according to the following formula:

$$\Delta I = W * (KIBOR_{(REV)} - 12.40\%) / 4$$

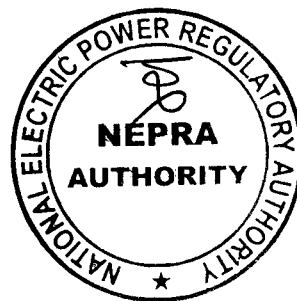
Where:

- $\Delta I$  = The variation in interest charges applicable corresponding to variation in KIBOR.  $\Delta I$  can be positive or negative depending upon whether KIBOR REV is > or < 12.40%. The interest payment obligation will be enhanced or reduced to the extent of  $\Delta I$  for each quarter under adjustment on quarterly basis.  
 $W$  = is the outstanding Working Capital

**VI) Terms and Conditions of Tariff:**

- i) Use of RFO will be considered as primary fuel.
- ii) Dispatch criterion will be based on the Energy Charge.
- iii) General assumptions of APL, which are not covered in this determination, may be dealt with in the PPA according to its standard terms.

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**Atlas Power Limited**  
**Adjusted Reference Tariff Table at the Time of COD**

| Year                    | Variable Charge (Rs./kWh) |               |               |               | Capacity Charge (Rs./kW/Hour) |                   |                         |               |               |               |                       |                |                  |               |
|-------------------------|---------------------------|---------------|---------------|---------------|-------------------------------|-------------------|-------------------------|---------------|---------------|---------------|-----------------------|----------------|------------------|---------------|
|                         | Fuel                      | Variable      |               | Total         | Fixed Local O&M               | Fixed Foreign O&M | Cost of Working Capital | Insurance     | ROE           | ROEDC         | Withholding Tax @7.5% | Loan Repayment | Interest Charges | Total         |
|                         |                           | Local O&M     | Foreign O&M   |               |                               |                   |                         |               |               |               |                       |                |                  |               |
| 1                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.3444         | 1.1290           | 2.4855        |
| 2                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.4006         | 1.0728           | 2.4855        |
| 3                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.4659         | 1.0075           | 2.4855        |
| 4                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.5419         | 0.9315           | 2.4855        |
| 5                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.6303         | 0.8431           | 2.4855        |
| 6                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.7331         | 0.7403           | 2.4855        |
| 7                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.8527         | 0.6207           | 2.4855        |
| 8                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.9918         | 0.4816           | 2.4855        |
| 9                       | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 1.1536         | 0.3198           | 2.4855        |
| 10                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 1.3418         | 0.1316           | 2.4855        |
| 11                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 12                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 13                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 14                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 15                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 16                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 17                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 18                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 19                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 20                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 21                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 22                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 23                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 24                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 25                      | 8.9793                    | 0.1134        | 0.5075        | 9.6002        | 0.0796                        | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| <b>Revised Levelize</b> | <b>8.9793</b>             | <b>0.1134</b> | <b>0.5075</b> | <b>9.6002</b> | <b>0.0796</b>                 | <b>0.0962</b>     | <b>0.1970</b>           | <b>0.1258</b> | <b>0.4312</b> | <b>0.0464</b> | <b>0.0358</b>         | <b>0.4491</b>  | <b>0.5483</b>    | <b>2.0095</b> |

Exchange rate = 84.35 Rs./US\$  
Fuel Price = Rs. 45,656.08/M.Ton  
US CPI = 216.33 US CPI (All Urban Consumers) for the month of November 2009 as notified by the US Bureau of Labor Statistics  
WPI = 145.36 Wholesale Price Index (Manufacturers) of October 2009 notified by Federal Bureau of Statistics  
factor = Rs. 12.9493 (US Cent 15.3519) /kWh



2



**Atlas Power Ltd.**  
**Debt Servicing Schedule**

Annex-2

Dependable Capacity at COD 213.856 MW  
Hours in an Year 8760  
Loan Amount Rs. 13,968,409,624  
3-Month KIBOR as on December 16, 2009 12.40%  
Premium 3.00%  
**Total Interest 15.40%**

| Year | Quarter | Period | Principal Million Rs. | Repayment Million Rs. | Mark-up Million Rs. | Balance Million Rs. | Debt Service Million Rs. | Annual Principal Repayment Rs./kW/hr. | Annual Interest Rs./kW/hr. | Annual Debt Servicing Rs./kW/hr. |
|------|---------|--------|-----------------------|-----------------------|---------------------|---------------------|--------------------------|---------------------------------------|----------------------------|----------------------------------|
| 1    | 1       | 1      | 13,968.41             | 152.27                | 537.78              | 13,816.14           | 690.06                   | 0.3444                                | 1.1290                     | 1.4734                           |
|      | 2       | 2      | 13,816.14             | 158.14                | 531.92              | 13,658.00           | 690.06                   |                                       |                            |                                  |
|      | 3       | 3      | 13,658.00             | 164.22                | 525.83              | 13,493.77           | 690.06                   |                                       |                            |                                  |
|      | 4       | 4      | 13,493.77             | 170.55                | 519.51              | 13,323.23           | 690.06                   |                                       |                            |                                  |
| 2    | 1       | 5      | 13,323.23             | 177.11                | 512.94              | 13,146.11           | 690.06                   | 0.4006                                | 1.0728                     | 1.4734                           |
|      | 2       | 6      | 13,146.11             | 183.93                | 506.13              | 12,962.18           | 690.06                   |                                       |                            |                                  |
|      | 3       | 7      | 12,962.18             | 191.01                | 499.04              | 12,771.17           | 690.06                   |                                       |                            |                                  |
|      | 4       | 8      | 12,771.17             | 198.37                | 491.69              | 12,572.80           | 690.06                   |                                       |                            |                                  |
| 3    | 1       | 9      | 12,572.80             | 206.00                | 484.05              | 12,366.80           | 690.06                   | 0.4659                                | 1.0075                     | 1.4734                           |
|      | 2       | 10     | 12,366.80             | 213.94                | 476.12              | 12,152.86           | 690.06                   |                                       |                            |                                  |
|      | 3       | 11     | 12,152.86             | 222.17                | 467.89              | 11,930.69           | 690.06                   |                                       |                            |                                  |
|      | 4       | 12     | 11,930.69             | 230.73                | 459.33              | 11,699.96           | 690.06                   |                                       |                            |                                  |
| 4    | 1       | 13     | 11,699.96             | 239.61                | 450.45              | 11,460.35           | 690.06                   | 0.5419                                | 0.9315                     | 1.4734                           |
|      | 2       | 14     | 11,460.35             | 248.83                | 441.22              | 11,211.52           | 690.06                   |                                       |                            |                                  |
|      | 3       | 15     | 11,211.52             | 258.41                | 431.64              | 10,953.10           | 690.06                   |                                       |                            |                                  |
|      | 4       | 16     | 10,953.10             | 268.36                | 421.69              | 10,684.74           | 690.06                   |                                       |                            |                                  |
| 5    | 1       | 17     | 10,684.74             | 278.70                | 411.36              | 10,406.05           | 690.06                   | 0.6303                                | 0.8431                     | 1.4734                           |
|      | 2       | 18     | 10,406.05             | 289.42                | 400.63              | 10,116.62           | 690.06                   |                                       |                            |                                  |
|      | 3       | 19     | 10,116.62             | 300.57                | 389.49              | 9,816.05            | 690.06                   |                                       |                            |                                  |
|      | 4       | 20     | 9,816.05              | 312.14                | 377.92              | 9,503.91            | 690.06                   |                                       |                            |                                  |
| 6    | 1       | 21     | 9,503.91              | 324.16                | 365.90              | 9,179.76            | 690.06                   | 0.7331                                | 0.7403                     | 1.4734                           |
|      | 2       | 22     | 9,179.76              | 336.64                | 353.42              | 8,843.12            | 690.06                   |                                       |                            |                                  |
|      | 3       | 23     | 8,843.12              | 349.60                | 340.46              | 8,493.52            | 690.06                   |                                       |                            |                                  |
|      | 4       | 24     | 8,493.52              | 363.06                | 327.00              | 8,130.46            | 690.06                   |                                       |                            |                                  |
| 7    | 1       | 25     | 8,130.46              | 377.03                | 313.02              | 7,753.43            | 690.06                   | 0.8527                                | 0.6207                     | 1.4734                           |
|      | 2       | 26     | 7,753.43              | 391.55                | 298.51              | 7,361.88            | 690.06                   |                                       |                            |                                  |
|      | 3       | 27     | 7,361.88              | 406.63                | 283.43              | 6,955.25            | 690.06                   |                                       |                            |                                  |
|      | 4       | 28     | 6,955.25              | 422.28                | 267.78              | 6,532.97            | 690.06                   |                                       |                            |                                  |
| 8    | 1       | 29     | 6,532.97              | 438.54                | 251.52              | 6,094.44            | 690.06                   | 0.9918                                | 0.4816                     | 1.4734                           |
|      | 2       | 30     | 6,094.44              | 455.42                | 234.64              | 5,639.01            | 690.06                   |                                       |                            |                                  |
|      | 3       | 31     | 5,639.01              | 472.96                | 217.10              | 5,166.06            | 690.06                   |                                       |                            |                                  |
|      | 4       | 32     | 5,166.06              | 491.16                | 198.89              | 4,674.89            | 690.06                   |                                       |                            |                                  |
| 9    | 1       | 33     | 4,674.89              | 510.07                | 179.98              | 4,164.82            | 690.06                   | 1.1536                                | 0.3198                     | 1.4734                           |
|      | 2       | 34     | 4,164.82              | 529.71                | 160.35              | 3,635.11            | 690.06                   |                                       |                            |                                  |
|      | 3       | 35     | 3,635.11              | 550.11                | 139.95              | 3,085.00            | 690.06                   |                                       |                            |                                  |
|      | 4       | 36     | 3,085.00              | 571.29                | 118.77              | 2,513.72            | 690.06                   |                                       |                            |                                  |
| 10   | 1       | 37     | 2,513.72              | 593.28                | 96.78               | 1,920.44            | 690.06                   | 1.3418                                | 0.1316                     | 1.4734                           |
|      | 2       | 38     | 1,920.44              | 616.12                | 73.94               | 1,304.32            | 690.06                   |                                       |                            |                                  |
|      | 3       | 39     | 1,304.32              | 639.84                | 50.22               | 664.48              | 690.06                   |                                       |                            |                                  |
|      | 4       | 40     | 664.48                | 664.48                | 25.58               | 0.00                | 690.06                   |                                       |                            |                                  |



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**DECISION OF THE AUTHORITY IN THE MATTER OF TARIFF ADJUSTMENT WITH RESPECT TO ATLAS POWER LIMITED (APL) TARIFF AT COMMERCIAL OPERATION DATE (COD)**

**1. Introduction**

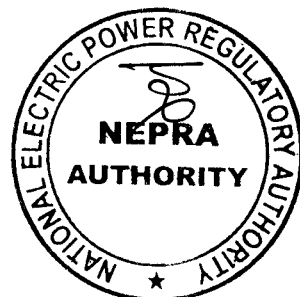
- 1.1 Atlas Power Limited ("APL") having successfully achieved its Commercial Operation Date (hereinafter COD) on December 17, 2009, vide letter dated January 14, 2010, filed a request for adjustment in its Reference Tariff in accordance with the Para 100 of the Authority's Order dated March 05, 2007 (herein after "Determination") notified vide SRO 1032 dated September 28, 2007.
- 1.2 According to the Authority's determination following types of adjustments were required to be made at the time of COD:

**One Time Adjustments at COD**

- a) Adjustments due to variation in Net Capacity.
- b) Adjustment on account of EPC.
- c) Adjustment on account of Custom Duties & Taxes
- d) Adjustment on account of Actual Interest During construction
- e) Adjustment on account of Financing Fee
- f) Adjustment on account of Return on Equity During Construction (ROEDC)
- g) Insurance during Construction

**Tariff Components Adjustment at COD**

- a) Adjustment on account of KIBOR
  - b) Adjustment on account of Exchange Rate.
  - c) Adjustment on account of US CPI and WPI
  - d) Adjustment on account of Fuel price
  - e) Adjustment on account of Insurance
- 1.3 In support of APL's request for adjustment in its relevant Tariff Components the following documents were submitted:
- Engineering and procurement contract
  - Construction Contract
  - Operation and Maintenance Contract
  - Spare Parts Contract
  - Common Term agreement (with all amendments)
  - Certificate of IDC test from Independent Engineer i.e. KEMA
  - Audited and Reviewed Financial Statements
  - General Ledgers



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- Bank Statements and bank advices
- EPC invoices
- Copies of Goods Declarations of Pakistan Customs, Payments Challans of these duties through pay orders of National Bank Ltd. reconciled with MAN Diesel invoices, copies of bills of lading.
- Equity/Debt Draw Downs Schedule reconciled with Bank Statements
- Insurance payments along with Insurance Policies reconciled with Bank Statements.
- Schedule of financing fee and charges
- Copies of other Source documents

## 2. Engineering Procurement and Construction (EPC) Cost

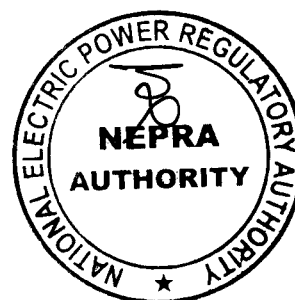
According to Para 100 (I) of the Authority's Determination the APL's EPC cost was subject to adjustment for variation in Euro/US\$ exchange rate parity. The Authority originally determined an amount of US\$ 190.009 million out of which foreign portion EPC cost was Euros 132.6174million (US\$169.75 million), whereas, the local component was US\$20.259 million; against which no exchange rate adjustment was allowed. APL has requested increase in EPC cost on the following two accounts:

- Revised Euro/US\$ exchange rate of 1.396 (weighted average exchange rate from March 2008 to January 2010) as compared to reference Euro/US\$ exchange rate of 1.28 in the Determination; and
- An additional 1.2 million Euro on account of modification from 132 kV dispersal system to 220 kV dispersal system in its EPC cost, which was subject to verification by NTDC, as per Para IX clause (xi) of the determination. Subsequently, NTDC has verified this cost as claimed by the APL.

Having gone through the relevant documents the Authority has verified to its satisfaction that the increase in EPC cost by US\$17.06 million or 9%, as claimed by APL is justified, therefore it is accepted. Accordingly, the EPC cost stands revised to US\$ 207.07 million.

## 3. Taxes and Duties

- 3.1 According to Para 77 of the Authority's Determination, taxes and duties were subject to adjustment at the time of COD. Accordingly the APL has requested Rs. 790 million against the determined amount of Rs. 518 million which is about 52.5% higher. In support of this APL submitted copies of Goods Declarations of Pakistan Customs, payment challans of these duties (by Pay orders of different banks submitted in the Government treasury through National Bank of Pakistan), Copies of bills of lading and MAN Diesel invoices etc.
- 3.2 Having considered all the evidences, the Authority is convinced that all the taxes and duties related to Engineering and procurement contract were duly paid. Accordingly the Authority has decided to accept APL's claim on this account. Accordingly Taxes and Duties stands revised to Rs. 790 million.



**4. Insurance Cost**

According to Para 79 of the Authority's Determination, Insurance Cost was subject to a maximum limit of 1.35% of EPC cost. APL has requested Rs. 202.05 million, which is within the allowed limit of 1.35% of EPC cost (Rs. 15,241 million). In support of this, APL has provided insurance policies, insurance invoices, and bank statements.

Having considered all the evidences, the Authority considers that APL's claim is justified therefore decided to accept APL's Insurance cost is being stands revised to Rs. 202.05 million.

**5. Interest During Construction (IDC)**

5.1 The Authority in its determination assessed US\$ 10.539 million on account of IDC, based on the Project cost of US\$ 224.426 and construction period of 18 months. The Authority vide Para 76 of the Determination allowed adjustment of IDC based on documentary evidence at the time of COD. APL has claimed US\$ 38.1466 million (Rs. 3,051 million) as IDC which is about 262% higher than the IDC allowed by the Authority in its determination. In support of this claim, APL furnished a detailed computation of IDC along with Bank Statements, Common Term Agreement and various other related agreements with the banks (consortium), KIBOR rates and exchange rates of the relevant dates etc.

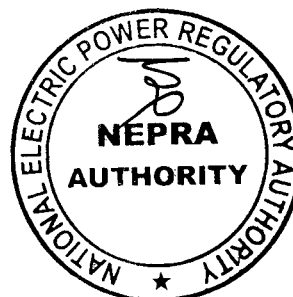
5.2 The Authority having considered all the evidences observed that the following were the main reasons for increase in IDC:

- Delay in COD by about 9 months.
- Increase in Actual KIBOR rates
- Increase in Loan amount due to exchange rate variation

5.3 The Authority has considered the APL's request for adjustment of the relevant components of tariff on account of delay in COD. The Authority considers that in the instant case no such mechanism has been provided in the determination 6<sup>th</sup> March 2007 notified in the official gazette vide S.R.O 1032/I/2007 dated 28<sup>th</sup> September 2007 to adjust the relevant components of tariff on account of delay in COD. The Authority has therefore decided not to consider the APL's request in adjusting relevant components of tariff beyond RCOD i.e. March 31, 2009 at this point of time. In view of the aforesaid the IDC up to the RCOD i.e. March 31, 2009 has been revised to Rs. 1,458 million.

**5.4 Financing Fee and Charges**

6.4.1 The Authority in its determination at Para 75 allowed US\$ 3.848 million assuming 2.5% as financing fee and charges. APL claimed US\$ 4.5530 million (Rs. 307.69 million) on this



account. APL claim under this head was higher by Rs. 73 million or 31% higher than the amount originally allowed. In support of this claim, APL submitted a schedule of these charges and fee, Bank Statements of Banks, Common Term Agreement and various other related agreements with the bank, Audited/Reviewed Financial statements.

6.4.2 Having considered all the evidences the Authority observed that the main reasons for such increase is an upward change in loan amount due to increase in EPC project cost (From Rs. 11.6 billion to Rs. 15.2 billion) as a result of increase in Euro/US\$ Parity in head of financing fee & charges.

6.4.3 After evaluating the documentary evidence, the Authority considers that the requested financing fee and charges of Rs. 307.69 million (about 2.2% of the financed amount and within the limit of 3% as benchmarked in the determination) is justified, therefore, has decided to allow the same.

## 6. Summary of adjustment in project cost:

6.1 The Authority had determined a total project cost of US\$ 224.42 million in the Determination. APL requested a total project cost of US\$272.49 million at COD, reflecting an increase of US\$48.07 million or 21.41% increase from the originally determined project cost, was requested by APL.

6.2 In view of the adjustments allowed by the Authority as described in the preceding paragraphs, the total project cost works out to be US\$253.85 million, which does not include the impact of Interest beyond March 31, 2009

6.3 A summary of project cost is as under:

|                                | 1                          | 2                    | 3                     | 4                 |                  |
|--------------------------------|----------------------------|----------------------|-----------------------|-------------------|------------------|
| Particulars                    | Project Cost-Determination | Project Cost-Claimed | Project Cost-Assessed | Difference (3-1)  | Difference (3-1) |
|                                | US\$ (in Million)          | US\$ (in Million)    | US\$ (in Million)     | US\$ (in Million) | %age             |
| <b>EPC Cost</b>                |                            |                      |                       |                   |                  |
| Equipment Procurement Contract | 169.75                     | 186.81               | 186.81                | 17.06             | 10.0%            |
| Construction Contract          | 20.26                      | 20.26                | 20.26                 | -                 | 0.0%             |
| <b>Total EPC</b>               | <b>190.01</b>              | <b>207.07</b>        | <b>207.07</b>         | <b>17.06</b>      | <b>9.0%</b>      |
| Emergency Spare Parts          | 2.55                       | 2.55                 | 2.55                  | -                 | 0.0%             |



|                              |               |               |               |              |              |
|------------------------------|---------------|---------------|---------------|--------------|--------------|
| Custom duties & Taxes        | 8.49          | 10.46         | 10.46         | 1.98         | 23.3%        |
| Mobilization Cost            | 1.93          | 1.93          | 1.93          | -            | 0.0%         |
| Land Purchases & Fee         | 1.73          | 1.73          | 1.73          | -            | 0.0%         |
| Development Cost             | 1.77          | 1.77          | 1.77          | -            | 0.0%         |
| Insurance Cost               | 2.57          | 3.08          | 2.80          | 0.23         | 9.0%         |
| Non-EPC Construction         | 1.00          | 1.00          | 1.00          | -            | 0.0%         |
| <b>CAPEX</b>                 | <b>210.04</b> | <b>229.79</b> | <b>229.31</b> | <b>19.27</b> | <b>9.2%</b>  |
| Financing Charges and Fees   | 3.85          | 4.55          | 4.55          | 0.71         | 18.3%        |
| Interest during Construction | 10.54         | 38.15         | 19.79         | 9.25         | 87.8%        |
| <b>Total Project Cost</b>    | <b>224.42</b> | <b>272.49</b> | <b>253.85</b> | <b>29.23</b> | <b>13.0%</b> |

|              |        |        |        |
|--------------|--------|--------|--------|
| Debt (75%)   | 168.32 | 204.37 | 190.00 |
| Equity (25%) | 56.11  | 68.12  | 63.85  |
|              | 224.42 | 272.49 | 253.85 |

## 7. Tariff Component Adjustments

7.1 According to para 100 (II), of the Authority's determination, all the Tariff components except fuel cost required to be adjusted at the time of COD based upon Initial Dependable Capacity (IDC). The reference Tariff was determined on the basis of minimum net capacity of 213.60 MW at delivery point and mean site condition. Consequent upon the IDC test, the net capacity has been assessed as 213.856 MW. All the relevant tariff components which were subject to adjustment on the basis of actual net capacity established are also being revised.

## 8. Indexations applicable to O&M cost

8.1 The Authority at Para 100 of the determination allowed APL indexations applicable to O&M cost. The reference O&M components of tariff were required to be replaced by the revised numbers after incorporating the revised adjustments at COD. In view of the Authority's decision, the reference O&M cost is being revised which shall replace the para 100 of SRO 1032 dated September 28, 2010, with the following:

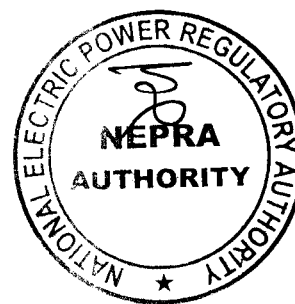
### a) Fixed O&M

$$F O\&M_{(LREV)} = \text{Rs. } 0.0796 \text{ per kW per Hour} * WPI_{(REV)} / 145.36$$

$$F O\&M_{(FREX)} = \text{Rs. } 0.0962 \text{ per kW per hour} * US CPI_{(REV)} / 216.33 * ER_{(REV)} / 84.35$$

Where:

$$F O\&M_{(LREV)} = \text{The revised applicable Fixed O\&M Local Component of the Capacity}$$



2

|                         |   |                                                                                                                             |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------------------|
|                         |   | Charge indexed with WPI                                                                                                     |
| F O&M <sub>(FREV)</sub> | = | The revised applicable Fixed O&M Foreign Component of the Capacity Charge indexed with US CPI and Exchange rate variations. |
| WPI <sub>(REV)</sub>    | = | The revised Wholesale Price Index (Manufacturers)                                                                           |
| WPI <sub>(REF)</sub>    | = | 145.36 Wholesale Price Index (Manufacturers) of October 2009 notified by Federal Bureau of Statistics                       |
| US CPI <sub>(REV)</sub> | = | The revised US CPI (All Urban Consumers)                                                                                    |
| US CPI <sub>(REF)</sub> | = | 216.33 US CPI (All Urban Consumers) for the month of November 2009 as notified by the US Bureau of Labor Statistics         |
| ER <sub>(REV)</sub>     | = | The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan                                  |

Note:- The above revised reference O&M cost components of Tariff shall be adjusted on quarterly basis for variation in WPI, US CPI and US\$/RS. Exchange rate variation

**b) Variable O&M**

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

$$V O\&M_{(IREV)} = \text{Rs. } 0.1134 \text{ per kW per Hour} * WPI_{(REV)} / 145.36$$

$$V O\&M_{(FREV)} = \text{Rs. } 0.5075 \text{ per kW per hour} * US CPI_{(REV)} / 216.33 * ER_{(REV)} / 84.35$$

Where:

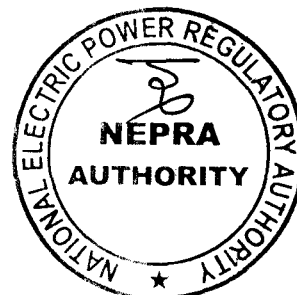
|                         |   |                                                                                                                             |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------------------|
| V O&M <sub>(LREV)</sub> | = | The revised applicable Variable O&M Local Component of the Energy Charge indexed with WPI                                   |
| V O&M <sub>(FREV)</sub> | = | The revised applicable Variable O&M Foreign Component of the Energy Charge indexed with US CPI and Exchange rate variations |
| WPI <sub>(REV)</sub>    | = | The revised wholesale Price Index (manufacturers)                                                                           |
| WPI <sub>(REF)</sub>    | = | 145.36 Wholesale Price Index (Manufacturers) of October 2009 notified by Federal Bureau of Statistics                       |
| US CPI <sub>(REV)</sub> | = | The revised US CPI (All Urban Consumers)                                                                                    |
| US CPI <sub>(REF)</sub> | = | 216.33 US CPI (All Urban Consumers) for the month of November 2009 as notified by the US Bureau of Labor Statistics         |
| ER <sub>(REV)</sub>     | = | The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan                                  |

**10. Adjustment on Account of Financing Cost of Working Capital:**

10.1 According to Para 85 of the Authority's determination, this cost has been adjusted according to the following formula:

$$WCC (adj) = 0.0900 / 29,571 * FP (Current)$$

$$WCC (adj) = 0.1970$$



2

Where;

WCC (adj) = Adjusted cost of working capital

FP (Current) = Actual fuel price at the time of first fill

- 10.2 According to Para 100 of the determination, cost of working capital is subject to the KIBOR indexation. Whereas, as per Para 100 VIII (a) (iii) of the determination adjustment on account of 3-month KIBOR variation shall be adjusted according to the following formula:

$$\Delta I = W * (KIBOR_{(REV)} - 12.40\%) / 4$$

Where:

$\Delta I$  = The variation in interest charges applicable corresponding to variation in KIBOR.  $\Delta I$  can be positive or negative depending upon whether KIBOR REV is > or < 12.40%. The interest payment obligation will be enhanced or reduced to the extent of  $\Delta I$  for each quarter under adjustment on quarterly basis.

W = is the outstanding Working Capital

### **11. Return on Equity**

The return on equity (ROE) was subject to adjustment on the basis of revised amount of equity and revised net capacity established at the time of COD. On the basis of the revised equity of US\$ 63.85 Million and net capacity of 213.856 MW the ROE component of Tariff Rs. 0.2830 originally allowed is being revised to Rs. 0.4312/kW/hr.

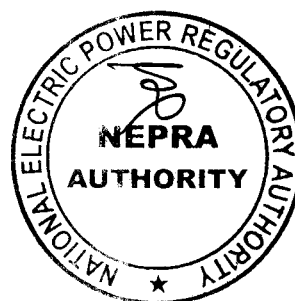
### **12. Return on Equity During Construction**

At the time of Determination the Authority determined the Return on Equity during construction (ROEDC) on assumed equity injection by the shareholders (as per the Determination) which was subject to adjustment as per the actual equity injection at COD. Based on the documentary evidence provided by APL in support of its claim, the Authority has revised ROEDC from Rs. 0.0480 /kW/hr to Rs. 0.0464 /kW/hr, based on RCOD that is March 31, 2009. Accordingly, based on the revised ROE and ROEDC, the tariff component of withholding tax has also been revised from Rs. 0.0248/ kW/hr to 0.0358/kW/hr.

### **13. Debt Servicing Component**

- 13.1 The Authority has carefully examined the APL's request for adjustment with respect to debt service component on the basis of documentary evidence. The common term agreement (hereinafter CTA) was signed with a consortium of banks in November 10, 2007 on the following salient terms:

- 3-months KIBOR plus 3% per annum interest rate;
- Term of loan 10 years, to be payable on 40 equal quarters







13.2 Based on the revised project cost of Rs. 18,624 Million, debt, @ 75% of the project cost works out to be Rs.13,968 million. Accordingly revised debt serving component is prepared @ 3 month KIBOR of 12.40% + 3 % margin, revised Capacity of 213.856 MW.

13.3 The interest part of fixed charge component will remain unchanged throughout the term except for the quarterly adjustment due to variations in interest rate as a result of variation in 3-monthly KIBOR according to the following formula:

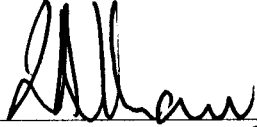
$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 12.40) / 4$$


Where:

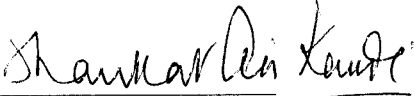
$\Delta I$  = The variation in interest charges applicable corresponding to variation in KIBOR.  $\Delta I$  can be positive or negative depending upon whether KIBOR REV is > or < 12.40 The interest payment obligation will be enhanced or reduced to the extent of  $\Delta I$  for each quarter under adjustment on quarterly basis.

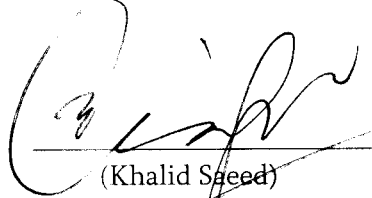
$P_{(REV)}$  = is the outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculations date. Period 1 shall commence on the date on which the 1<sup>st</sup> installment is due.

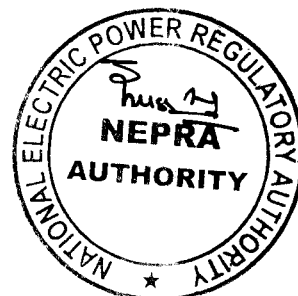
#### AUTHORITY

  
(Zafar Ali Khan)  
Member  
17/5/10

  
(Maqbool Ahmad Khawaja)  
Member

  
(Shaukat Ali Kundi)  
Member  
17.05.2010

  
(Khalid Saeed)  
Chairman



**Atlas Power Limited**  
**Adjusted Reference Tariff Table at the Time of COD**

| Year                    | Variable Charge (Rs./kWh) |                    |                      |               | Capacity Charge (Rs./kW/ Hour) |                   |                         |               |               |               |                       |                |                  |               |
|-------------------------|---------------------------|--------------------|----------------------|---------------|--------------------------------|-------------------|-------------------------|---------------|---------------|---------------|-----------------------|----------------|------------------|---------------|
|                         | Fuel                      | Variable Local O&M | Variable Foreign O&M | Total         | Fixed Local O&M                | Fixed Foreign O&M | Cost of Working Capital | Insurance     | ROE           | ROEDC         | Withholding Tax @7.5% | Loan Repayment | Interest Charges | Total         |
| 1                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.3444         | 1.1290           | 2.4855        |
| 2                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.4006         | 1.0728           | 2.4855        |
| 3                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.4659         | 1.0075           | 2.4855        |
| 4                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.5419         | 0.9315           | 2.4855        |
| 5                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.6303         | 0.8431           | 2.4855        |
| 6                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.7331         | 0.7403           | 2.4855        |
| 7                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.8527         | 0.6207           | 2.4855        |
| 8                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 0.9918         | 0.4816           | 2.4855        |
| 9                       | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 1.1536         | 0.3198           | 2.4855        |
| 10                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | 1.3418         | 0.1316           | 2.4855        |
| 11                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 12                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 13                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 14                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 15                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 16                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 17                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 18                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 19                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 20                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 21                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 22                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 23                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 24                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| 25                      | 8.9793                    | 0.1134             | 0.5075               | 9.6002        | 0.0796                         | 0.0962            | 0.1970                  | 0.1258        | 0.4312        | 0.0464        | 0.0358                | -              | -                | 1.0121        |
| <b>Revised Levelize</b> | <b>8.9793</b>             | <b>0.1134</b>      | <b>0.5075</b>        | <b>9.6002</b> | <b>0.0796</b>                  | <b>0.0962</b>     | <b>0.1970</b>           | <b>0.1258</b> | <b>0.4312</b> | <b>0.0464</b> | <b>0.0358</b>         | <b>0.4491</b>  | <b>0.5483</b>    | <b>2.0095</b> |

Exchange rate = 84.35 Rs./US\$

Fuel Price = Rs. 45,656.08/M.Ton

US CPI = 216.33 US CPI (All Urban Consumers) for the month of November 2009 as notified by the US Bureau of Labor Statistics

WPI = 145.36 Wholesale Price Index (Manufacturers) of October 2009 notified by Federal Bureau of Statistics

factor = Rs. 12.9493 (US Cent 15.3519) /kWh

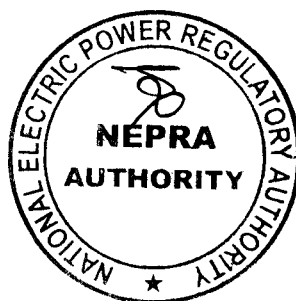


2

## Debt Servicing Schedule

Dependable Capacity at COD 213.856 MW  
Hours in an Year 8760  
Loan Amount Rs. 13,968,409,624  
3-Month KIBOR as on December 16, 2009 12.40%  
Premium 3.00%  
**Total Interest 15.40%**

| Year | Quarter | Period | Principal Million Rs. | Repayment Million Rs. | Mark-up Million Rs. | Balance Million Rs. | Debt Service Million Rs. | Annual Principal Repayment Rs./kW/ hr. | Annual Interest Rs./kW/ hr. | Annual Debt Servicing Rs./kW/ hr. |
|------|---------|--------|-----------------------|-----------------------|---------------------|---------------------|--------------------------|----------------------------------------|-----------------------------|-----------------------------------|
| 1    | 1       | 1      | 13,968.41             | 152.27                | 537.78              | 13,816.14           | 690.06                   | 0.3444                                 | 1.1290                      | 1.4734                            |
|      | 2       | 2      | 13,816.14             | 158.14                | 531.92              | 13,658.00           | 690.06                   |                                        |                             |                                   |
|      | 3       | 3      | 13,658.00             | 164.22                | 525.83              | 13,493.77           | 690.06                   |                                        |                             |                                   |
|      | 4       | 4      | 13,493.77             | 170.55                | 519.51              | 13,323.23           | 690.06                   |                                        |                             |                                   |
| 2    | 1       | 5      | 13,323.23             | 177.11                | 512.94              | 13,146.11           | 690.06                   | 0.4006                                 | 1.0728                      | 1.4734                            |
|      | 2       | 6      | 13,146.11             | 183.93                | 506.13              | 12,962.18           | 690.06                   |                                        |                             |                                   |
|      | 3       | 7      | 12,962.18             | 191.01                | 499.04              | 12,771.17           | 690.06                   |                                        |                             |                                   |
|      | 4       | 8      | 12,771.17             | 198.37                | 491.69              | 12,572.80           | 690.06                   |                                        |                             |                                   |
| 3    | 1       | 9      | 12,572.80             | 206.00                | 484.05              | 12,366.80           | 690.06                   | 0.4659                                 | 1.0075                      | 1.4734                            |
|      | 2       | 10     | 12,366.80             | 213.94                | 476.12              | 12,152.86           | 690.06                   |                                        |                             |                                   |
|      | 3       | 11     | 12,152.86             | 222.17                | 467.89              | 11,930.69           | 690.06                   |                                        |                             |                                   |
|      | 4       | 12     | 11,930.69             | 230.73                | 459.33              | 11,699.96           | 690.06                   |                                        |                             |                                   |
| 4    | 1       | 13     | 11,699.96             | 239.61                | 450.45              | 11,460.35           | 690.06                   | 0.5419                                 | 0.9315                      | 1.4734                            |
|      | 2       | 14     | 11,460.35             | 248.83                | 441.22              | 11,211.52           | 690.06                   |                                        |                             |                                   |
|      | 3       | 15     | 11,211.52             | 258.41                | 431.64              | 10,953.10           | 690.06                   |                                        |                             |                                   |
|      | 4       | 16     | 10,953.10             | 268.36                | 421.69              | 10,684.74           | 690.06                   |                                        |                             |                                   |
| 5    | 1       | 17     | 10,684.74             | 278.70                | 411.36              | 10,406.05           | 690.06                   | 0.6303                                 | 0.8431                      | 1.4734                            |
|      | 2       | 18     | 10,406.05             | 289.42                | 400.63              | 10,116.62           | 690.06                   |                                        |                             |                                   |
|      | 3       | 19     | 10,116.62             | 300.57                | 389.49              | 9,816.05            | 690.06                   |                                        |                             |                                   |
|      | 4       | 20     | 9,816.05              | 312.14                | 377.92              | 9,503.91            | 690.06                   |                                        |                             |                                   |
| 6    | 1       | 21     | 9,503.91              | 324.16                | 365.90              | 9,179.76            | 690.06                   | 0.7331                                 | 0.7403                      | 1.4734                            |
|      | 2       | 22     | 9,179.76              | 336.64                | 353.42              | 8,843.12            | 690.06                   |                                        |                             |                                   |
|      | 3       | 23     | 8,843.12              | 349.60                | 340.46              | 8,493.52            | 690.06                   |                                        |                             |                                   |
|      | 4       | 24     | 8,493.52              | 363.06                | 327.00              | 8,130.46            | 690.06                   |                                        |                             |                                   |
| 7    | 1       | 25     | 8,130.46              | 377.03                | 313.02              | 7,753.43            | 690.06                   | 0.8527                                 | 0.6207                      | 1.4734                            |
|      | 2       | 26     | 7,753.43              | 391.55                | 298.51              | 7,361.88            | 690.06                   |                                        |                             |                                   |
|      | 3       | 27     | 7,361.88              | 406.63                | 283.43              | 6,955.25            | 690.06                   |                                        |                             |                                   |
|      | 4       | 28     | 6,955.25              | 422.28                | 267.78              | 6,532.97            | 690.06                   |                                        |                             |                                   |
| 8    | 1       | 29     | 6,532.97              | 438.54                | 251.52              | 6,094.44            | 690.06                   | 0.9918                                 | 0.4816                      | 1.4734                            |
|      | 2       | 30     | 6,094.44              | 455.42                | 234.64              | 5,639.01            | 690.06                   |                                        |                             |                                   |
|      | 3       | 31     | 5,639.01              | 472.96                | 217.10              | 5,166.06            | 690.06                   |                                        |                             |                                   |
|      | 4       | 32     | 5,166.06              | 491.16                | 198.89              | 4,674.89            | 690.06                   |                                        |                             |                                   |
| 9    | 1       | 33     | 4,674.89              | 510.07                | 179.98              | 4,164.82            | 690.06                   | 1.1536                                 | 0.3198                      | 1.4734                            |
|      | 2       | 34     | 4,164.82              | 529.71                | 160.35              | 3,635.11            | 690.06                   |                                        |                             |                                   |
|      | 3       | 35     | 3,635.11              | 550.11                | 139.95              | 3,085.00            | 690.06                   |                                        |                             |                                   |
|      | 4       | 36     | 3,085.00              | 571.29                | 118.77              | 2,513.72            | 690.06                   |                                        |                             |                                   |
| 10   | 1       | 37     | 2,513.72              | 593.28                | 96.78               | 1,920.44            | 690.06                   | 1.3418                                 | 0.1316                      | 1.4734                            |
|      | 2       | 38     | 1,920.44              | 616.12                | 73.94               | 1,304.32            | 690.06                   |                                        |                             |                                   |
|      | 3       | 39     | 1,304.32              | 639.84                | 50.22               | 664.48              | 690.06                   |                                        |                             |                                   |
|      | 4       | 40     | 664.48                | 664.48                | 25.58               | 0.00                | 690.06                   |                                        |                             |                                   |



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