



CHAIRMAN

# National Electric Power Regulatory Authority Islamic Republic of Pakistan

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No.NEPRA/CM-85/2006

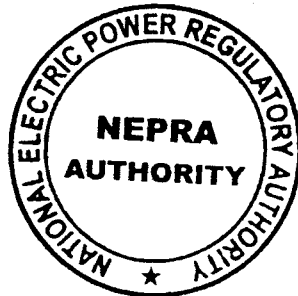
14<sup>th</sup> October, 2006

Subject: Corrigendum/Addendum - Attock Gen Limited (Case No. NEPRA/TRF-55/AGL-2006)

In continuation of this office letter No. NEPRA/TRF-55/AGL-2006/6578 dated September 04, 2006, whereby determination of the Authority in respect of Attock Gen Limited was sent, enclosed please find herewith the following corrigendum/addendum:

- The words "duly verified by OGRA" appearing in the last line of para 70 page 27, last line of para 85 page 34 and last line of para 93 page 39 be deleted. Amended pages 27, 34 & 39 are attached herewith for replacement.
  - The words "at 100% plant factor" be added after the words "net thermal efficiency" in the second last line of para 68 page 26 of the determination. Amended page 26 is attached herewith for replacement.
  - The words and the parenthesis "(or applicable rate)" be added after "@7.5%" in the third and fifth line of para 82 page 31 and first & third line of para 90 page 37. Amended pages 31 & 37 attached for replacement.
2. In addition to above, an inadvertent computational error has been noticed in the Return on Equity component of the reference tariff table which has been rectified and the amended/corrected pages are enclosed herewith for replacement as mentioned hereunder:
- Figures mentioned against Return on Equity and ROE during construction as PKR/kW/Hour 0.1986 and 0.0379 in the table Reference Tariff under the column, year 1 to 10 and year 11 to 25, at para 79 page 30 & para 87 page 35 and item (iv) & (v) of para 80 page 31 and para 88 page 36 be replaced with 0.2017 and 0.0385. Total Capacity Charges appearing as PKR/kW/Hour 1.3675 & 0.4817 in the table Reference Tariff para 79 page 30 and para 87 page 35 be replaced with 1.3712 and 0.4854 respectively. Amended pages 30, 31, 35 and 36 are attached for replacement.
3. In view of above mentioned amendments/corrections, the revised order of the Authority along with Annexure-I & Annexure-II for the purpose of clarity is sent herewith for notification in the official gazette.

The Secretary  
Cabinet Division  
Government of Pakistan  
Islamabad.



  
Lt Gen (R) Saeed uz Zafar

Copy to;

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

**ORDER OF THE AUTHORITY**  
**IN CASE NO. NEPRA/TRF-55/AGL-2006**  
**TO BE NOTIFIED IN THE OFFICIAL GAZETTE**

Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, Attock Gen Limited (AGL) 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 tariff for delivery of electricity to CPPA of NTDC for procurement on behalf of EX-WAPDA Distribution Companies.

**Reference Tariff**

Tariff Components	Year 1 to 10	Year 11 to 25
Capacity Charge (PKR/kW/Hour)		
Fixed O&M	0.1517	0.1517
Insurance	0.0494	0.0494
Working Capital	0.0441	0.0441
Debt Service	0.8858	-
Return on Equity	0.2017	0.2017
ROE during Construction	0.0385	0.0385
Total Capacity Charge	1.3712	0.4854
Energy Charge Rs./kWh		
Fuel Cost Component	4.3624	4.3624
Variable O&M – Foreign	0.3348	0.3348
Variable O&M – Local	0.0971	0.0971

- Note:
- Capacity Charge Rs./kW/hour is applicable to dependable capacity at the delivery Point.
  - Dispatch criterion will be the Energy Charge.
  - The above tariff is applicable for a period of 25 years commencing from the date of the Commercial Operation.
  - Component wise tariff is indicated at Annex-I and Debt Service Schedule at Annex-II

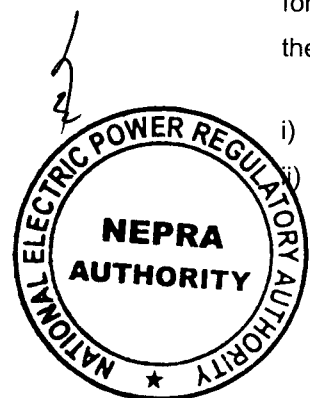
The following indexations shall be applicable to reference tariff.

i) **One Time Adjustment**

a) **Adjustment due to variation in net capacity**

The reference tariff has been determined on the basis of minimum net capacity of 156.138 MW at delivery point at mean site conditions. All the tariff components except fuel cost component shall be adjusted at the time of COD based upon the IDC tests to be carried out for determination of contracted capacity. If the IDC is established higher than 156.138 MW, the adjustments shall be made according to the following formula:

- |                   |   |                                |
|-------------------|---|--------------------------------|
| Revised Fixed O&M | = | 0.1517/tested IDC x 156.138 MW |
| Insurance         | = | 0.0494/tested IDC x 156.138 MW |



iii)	Debt Service	=	0.8858/tested IDC x 156.138 MW
iv)	Return on Equity	=	0.2017/tested IDC x 156.138 MW
v)	ROE during Construction	=	0.0385/tested IDC x 156.138 MW
vi)	Variable O&M - Foreign	=	0.3348/tested IDC x 156.138 MW
vii)	Variable O&M – Local	=	0.0971/tested IDC x 156.138 MW

b) 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 AGL according to the following formula:

$$\text{Insurance (Revised)} = \text{AIC}/\$ 1.125 \text{ million} \times \text{AP}$$

Where;

$$\begin{aligned} \text{AIC} &= \text{Adjusted Insurance Component as per IDC Test} \\ \text{AP} &= \text{Actual Premium} \end{aligned}$$

c) Adjustment due to custom duties and Interest during Construction

Debt Service, Return on Equity and ROE during construction shall be made on account of actual variation in customs duties and Interest During Construction with reference to the estimated figures of USD 6.510 million and USD 7.3961 million respectively.

II) Pass-Through Items

No provision for income tax has been accounted for in the tariff. If AGL is obligated to pay any tax on its income, the exact amount paid by the company may be reimbursed by NTDC to AGL 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, AGL may also submit to NTDC details of any tax shield savings and NTDC may deduct the amount of these savings from its payment to AGL 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% equity according to the following formula:

$$\text{Withholding Tax Payable} = [15\% * (E_{(\text{REF})} + \text{ROEDC}_{(\text{Ref})})] * 7.5\% \text{ (or applicable rate)}$$

Where:

$$\begin{aligned} E_{(\text{REF})} &= \text{Reference Equity (US\$ 29.72 million} \times 60) \\ \text{ROEDC}_{(\text{REF})} &= \text{Reference Return on Equity During Construction} \end{aligned}$$



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Note: In case of foreign equity withholding tax calculated according to the above formula shall be adjusted for variation in currency (US\$ to Rupee). The adjustment on account of variation in exchange rate (US\$/PKR) shall also be applicable on the Foreign component of the equity.

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 the 50% of Fixed O&M part of Capacity Charge will be adjusted on account of local Inflation (WPI) and 50% 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 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:

#### b) Fixed O&M

$$F O\&M_{(LREV)} = \text{Rs. } 0.1517 \text{ per kW per Hour} * 50\% * WPI_{(REV)} / 117.80$$

$$F O\&M_{(FREY)} = \text{Rs. } 0.1517 \text{ per kW per hour} * 50\% * US CPI_{(REV)} / 199.8 * ER_{(REV)} / 60$$

Where:

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

$F O\&M_{(FREY)}$  = 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)

$WPI_{(REF)}$  = 117.80 wholesale price index (manufacturers) of April 2006 notified by Federal Bureau of Statistics

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



US CPI<sub>(REF)</sub> = 199.8 US CPI (All Urban Consumers) for the month of March 2006 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 reference numbers indicated above shall be replaced by the revised numbers after incorporating the required adjustments at COD.

c) Variable O&M

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

$$V O\&M_{(FREV)} = \text{Rs. } 0.3348 \text{ per kWh} * US CPI_{(REV)} / 199.8 * ER_{(FREV)} / 60$$

$$V O\&M_{(LREV)} = \text{Rs. } 0.0971 \text{ per kWh} * WPI_{(REV)} / 117.80$$

Where:

V O&M<sub>(FREV)</sub> = The revised applicable Variable O&M Component of the Energy Charge indexed with US CPI and Exchange rate variations

US CPI<sub>(REV)</sub> = The revised US CPI (All Urban Consumers)

US CPI<sub>(REF)</sub> = 199.8 US CPI (All Urban Consumers) for the month of March 2006 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 reference VO&M indicated above shall be replaced with the revised number at COD after incorporating the required adjustment based upon the IDC Test.

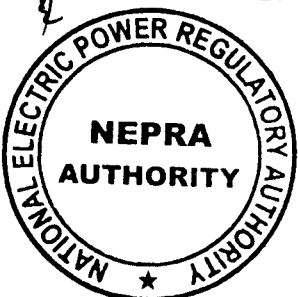
d) Adjustment for KIBOR variation

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 6-monthly KIBOR according to the following formula:

$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 8.54\%) / 4$$

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 < 8.54%. 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 after availing the grace period.

e) Fuel Price Variation

The Variable 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 the Attock Petroleum Ltd. In this regard, the variation in AGL's allowed rate relating to fuel cost shall be revised according to the following formula:

$$FC_{(Rev)} = Rs.4.3624 \text{ per kWh} * FP_{(Rev)} / Rs. 22140.07 \text{ per Ton}$$

Where:

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

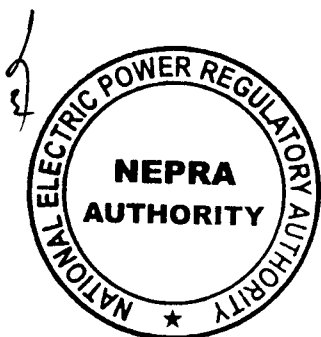
$$FP_{(Rev)} = \text{The new price of RFO as determined per price mechanism given at para 69 of this determination.}$$

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 AGL's request for adjustment in accordance with the requisite indexation mechanism stipulated herein.

**Terms and Conditions of Tariff:**

- i) All new equipment will be installed and the plant will be of standard configuration.
- ii) Dispatch criterion will be based on the Energy Charge.
- iii) General assumptions of AGL, which are not covered in this determination, may be dealt with in the PPA according to its standard terms.

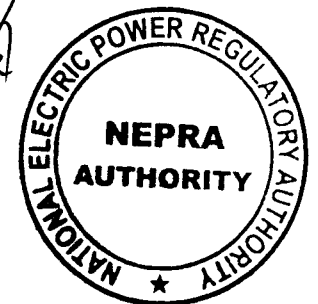
The above terms and conditions be incorporated as the specified tariff approved by the Authority pursuant to Rule 6 of the Licencing (Generation) Rules, in a Power Purchase Agreement between AGL and CPPA.



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**Attock Gen Limited**  
**Specified Tariff**

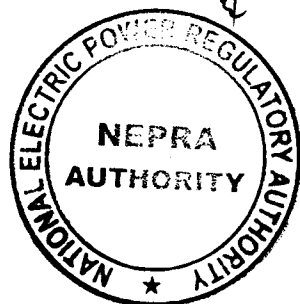
Year	Variable Charge (PKR/kWh)			Capacity Charge (PKR/kW/Hour)									Total	
	Fuel	Variable O&M	Total	Fixed O&M	Insurance	Financing Cost on Working Capital	Return on Equity	Return on Equity for Construction Period	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Total	Fixed Cost at 60% Plant Factor Rs./kWh	Cents/kWh
1	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.2965	0.5893	1.3891	2.3152	11.8490
2	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.3322	0.5536	1.3891	2.3152	11.8490
3	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.3722	0.5135	1.3891	2.3152	11.8490
4	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.4171	0.4687	1.3891	2.3152	11.8490
5	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.4673	0.4184	1.3891	2.3152	11.8490
6	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.5236	0.3621	1.3891	2.3152	11.8490
7	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.5867	0.2990	1.3891	2.3152	11.8490
8	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.6574	0.2283	1.3891	2.3152	11.8490
9	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.7366	0.1491	1.3891	2.3152	11.8490
10	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.8254	0.0604	1.3891	2.3152	11.8490
11	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
12	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
13	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
14	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
15	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
16	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
17	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
18	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
19	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
20	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
21	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
22	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
23	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
24	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
25	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
<b>Levelized Tariff (1-25 Years)</b>			<b>4.7943</b>	<b>0.1517</b>	<b>0.0494</b>	<b>0.0441</b>	<b>0.2017</b>	<b>0.0385</b>	<b>0.0180</b>	<b>0.3231</b>	<b>0.2765</b>	<b>1.1029</b>	<b>1.8382</b>	<b>11.0542</b>



# **Attock Gen Limited** **Debt Servicing Schedule**

KIBOR 8.54%  
Premium 3.00%

Period	Principle Million \$	Repayment Million \$	Mark-Up Million \$	Balance Million \$	Debt Service Million \$	Annual Principle Repayment \$ Million	Annual Interest \$ Million	Annual Principle Repayment Rs. Million	Annual Interest Rs. Million	Principal Repayment Rs./kW/ Month	Interest Rs./kW/ Month
1	118.88	1.62	3.43	117.26	5.0479						
2	117.26	1.66	3.38	115.60	5.0479						
3	115.60	1.71	3.33	113.88	5.0479						
4	113.88	1.76	3.29	112.12	5.0479	6.76	13.43	405.49	806.00	216.42	430.17
5	112.12	1.81	3.23	110.31	5.0479						
6	110.31	1.87	3.18	108.44	5.0479						
7	108.44	1.92	3.13	106.52	5.0479						
8	106.52	1.97	3.07	104.55	5.0479	7.57	12.62	454.35	757.14	242.50	404.10
9	104.55	2.03	3.02	102.52	5.0479						
10	102.52	2.09	2.96	100.43	5.0479						
11	100.43	2.15	2.90	98.28	5.0479						
12	98.28	2.21	2.84	96.06	5.0479	8.48	11.71	509.10	702.39	271.71	374.88
13	96.06	2.28	2.77	93.79	5.0479						
14	93.79	2.34	2.71	91.45	5.0479						
15	91.45	2.41	2.64	89.04	5.0479						
16	89.04	2.48	2.57	86.56	5.0479	9.51	10.68	570.44	641.05	304.45	342.14
17	86.56	2.55	2.50	84.01	5.0479						
18	84.01	2.62	2.42	81.38	5.0479						
19	81.38	2.70	2.35	78.68	5.0479						
20	78.68	2.78	2.27	75.90	5.0479	10.65	9.54	639.17	572.32	341.14	305.46
21	75.90	2.86	2.19	73.05	5.0479						
22	73.05	2.94	2.11	70.11	5.0479						
23	70.11	3.03	2.02	67.08	5.0479						
24	67.08	3.11	1.94	63.97	5.0479	11.94	8.26	716.19	495.30	382.24	264.35
25	63.97	3.20	1.85	60.77	5.0479						
26	60.77	3.29	1.75	57.47	5.0479						
27	57.47	3.39	1.66	54.08	5.0479						
28	54.08	3.49	1.56	50.59	5.0479	13.37	6.82	802.48	409.01	428.30	218.29
29	50.59	3.59	1.46	47.01	5.0479						
30	47.01	3.69	1.36	43.31	5.0479						
31	43.31	3.80	1.25	39.51	5.0479						
32	39.51	3.91	1.14	35.61	5.0479	14.99	5.21	899.17	312.32	479.90	166.69
33	35.61	4.02	1.03	31.59	5.0479						
34	31.59	4.14	0.91	27.45	5.0479						
35	27.45	4.26	0.79	23.19	5.0479						
36	23.19	4.38	0.67	18.82	5.0479	16.79	3.40	1,007.51	203.98	537.73	108.87
37	18.82	4.51	0.54	14.31	5.0479						
38	14.31	4.64	0.41	9.68	5.0479						
39	9.68	4.77	0.28	4.91	5.0479						
40	4.91	4.91	0.14	0.00	5.0479	18.82	1.38	1,128.91	82.58	602.52	44.07





for the non-escalable part of the capacity purchase price (Principal + Interest) works out Rs. 0.8858/kW/hour or Rs.646.59/kW/month.

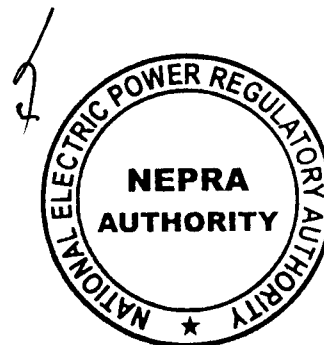
63. AGL has proposed 15.5% as return on equity based on Internal Rate of Return (IRR) for the whole life of the project net of the withholding tax of 7.5%. Additionally Rs. 31.1276/kW/month has been included in the ROE component as cost of working Capital. The total ROE component as Rs. 248.4/kW/month has been requested by the petitioner.
64. The ROE as 15.5% demanded by the petitioner is on the higher side. The Authority has allowed 15% (IRR) in the cases of other IPPs and finds no justification to allow higher return in the instant case. The Authority, therefore, decides to allow 15% IRR to AGL. AGL has worked out Return on equity during the construction period on the basis of 100% equity injection at the start of the construction period. The ROE during construction thus works out Rs. 0.0385/kW/hour. This will be adjusted as per actual draw downs during the construction period at the time of COD.

f. **INSURANCE**

65. AGL has requested Rs. 36.0258/kW/month as Insurance charges. The annual estimates for the Insurance cost have not been provided in the petition. However, the annual cost of Insurance claimed translates in to US\$ 1.125 million, which is approximately 0.88% of the EPC cost. The Insurance Cost of US\$ 1.125 million as proposed by AGL being reasonable is, accepted as such.

g. **WORKING CAPITAL**

66. AGL has requested working capital cost as Rs. 31.1276/kW/month. The company has maintained that it shall require funds to place orders to the fuel supplier for the fuel well in advance of the actual operation of power plant. It has been further stated by petitioner that the company shall also pay the fuel supplier (ARL) for the fuel inventory specifically reserved for AGL for which it requires sufficient funds. The request is in line with Authority's decision in other cases. The Authority has therefore, assessed cost of working capital as Rs. 0.0441/kW/Hour.



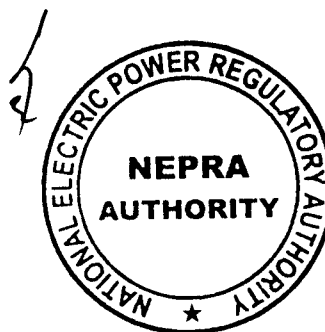
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h. **FUEL COST**

67. The petitioner has worked out fuel cost component of Rs. 2.8618 per kWh. The fuel cost component has been worked out at the following basic parameters;

Fuel Price	Rs. 14300 per ton
Thermal Efficiency.	44.3% (Life-cycle net at site conditions)
Heat Rate	7701.4 BTU/kWh (LHV)

68. AGL has proposed net thermal efficiency of 44.3% for the life of the project while taking in to account the impact of fuel cleaning, average plant aging and a notional 60% plant factor. In the feasibility report the same is indicated as 45% and gross at 47%. The net efficiency taken in the Upfront Tariff for the IPPs is 45.5%. According to information gathered from various sources, the net thermal efficiency in case of reciprocating engines with this type of technology is not less than 45%. However, the petitioner has proposed 44.3% net efficiency at notional 60% plant factor, while the net efficiency at base load (100% plant factor) would be considerably higher. The efficiency level for determining fuel cost component of applicable tariff is considered at a full load i.e. base load at 100% plant factor and not the notional 60% plant factor as proposed by the petitioner. The Authority therefore, considers 45% net thermal efficiency at 100% plant factor, is a reasonable level for calculating fuel cost component.
69. The reference fuel price taken by AGL for calculating fuel cost component is of December 2004. The price for RFO for the fortnight 1-15 July 2006 provided by the petitioner was Rs. 22140.07 per ton. AGL has stated that fuel price for Attock Petroleum Ltd pursuant to deregulation, is fixed according to the pricing mechanism followed by other oil marketing companies in Pakistan. AGL was asked to provide the price mechanism for future adjustments in fuel cost component. AGL has provided the pricing mechanism which shall be used for fixing RFO price in future. It has been stated by AGL that the price for RFO shall be equal to imported HSFO price based on Platts Oilgram Report while the premium, incidental charges and margin of the oil marketing company shall be further added to arrive at the market price for RFO. The following mechanism has been provided by AGL:



*Handwritten signature*

Description	US\$/Ton	Rs./Ton
HSFO Arab Gulf Average Price for applicable Fortnight (From Platts Oilgram Report)	309.50	19679.96
Black Premium (From OGRA)	19.20	1158.82
C & F Price – A	328.70	19838.78
Crude Handling and Incidental charges (7.282% of C&F Price)*		1444.63
Sub-Total – B		1444.63
EX Refinery Price – (C=A+B)		21283.41
GST (15% of EX Refinery Price)		3192.51
ARL Selling Price – D		24475.92
OMC Margin (3.5% of ARL Selling Price)		856.66
GST (15% on OMC Margin)		128.50
Sub Total – E		985.16
Market Price – (F=D+E)		25461.08
Cost of RFO excluding GST		22140.07

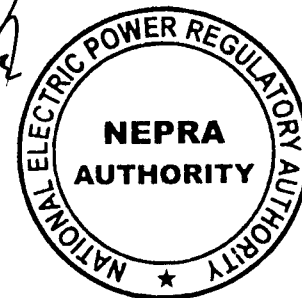
US\$ Pak Rupee Exchange Rate-NBP Selling TT/OD = 60.38

\* 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 AGL.

70. Taking in to account the price for RFO as Rs. 22140 07/ton and net efficiency of 45% (Heat rate of 7582.2 Btu/kWh) the fuel cost component works out as Rs. 4.3624 per kWh. 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.

i. **VARIABLE O & M COST**

71. AGL has requested Variable O&M cost of Rs. 0.4319/kWh, of which Rs. 0.3348/kWh is foreign component and Rs. 0.0971/kWh as local component. It has been stated by the petitioner that foreign O&M cost component should be adjusted with EURO/PKR exchange rate and indexed with the European CPI, as the company has to make payment to its O&M contractor in Euros. The petitioner did not provide the basis and rational for this cost component in the petition. However, upon information sought through our information direction the petitioner has provided the details of annual cost estimates for the Variable O&M as per the following breakup:



**Reference Tariff**

79. After reviewing the evidence submitted during the proceedings and from information gained through other sources, the Authority has determined the reference tariff for AGL as indicated in the following table:

**Reference Tariff**

Tariff Components	Year 1 to 10	Year 11 to 25
Capacity Charge (PKR/kW/Hour)		
Fixed O&M	0.1517	0.1517
Insurance	0.0494	0.0494
Working Capital	0.0441	0.0441
Debt Service	0.8858	-
Return on Equity	0.2017	0.2017
ROE during Construction	0.0385	0.0385
Total Capacity Charge	1.3712	0.4854
Energy Charge Rs./kWh		
Fuel Cost Component	4.3624	4.3624
Variable O&M – Foreign	0.3348	0.3348
Variable O&M – Local	0.0971	0.0971

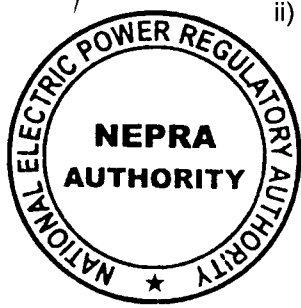
Note:

- 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

**One Time Adjustment****Adjustment due to variation in net capacity**

80. The reference tariff has been determined on the basis of minimum net capacity of 156.138 MW at delivery point at mean site conditions. All the tariff components except fuel cost component shall be adjusted at the time of COD based upon the IDC tests to be carried out for determination of contracted capacity. If the IDC is established higher than 156.138 MW, the adjustments shall be made according to the following formula:

- i) Revised Fixed O&M =  $0.1517/\text{tested IDC} \times 156.138 \text{ MW}$
- ii) Insurance =  $0.0494/\text{tested IDC} \times 156.138 \text{ MW}$



iii)	Debt Service	=	0.8858/tested IDC x 156.138 MW
iv)	Return on Equity	=	0.2017/tested IDC x 156.138 MW
v)	ROE during Construction	=	0.0385/tested IDC x 156.138 MW
vi)	Variable O&M - Foreign	=	0.3348/tested IDC x 156.138 MW
vii)	Variable O&M – Local	=	0.0971/tested IDC x 156.138 MW

#### Adjustment in Insurance Component

81. Insurance component of reference tariff shall be adjusted as per actual on yearly basis upon production of authentic documentary evidence by AGL according to the following formula:

$$\text{Insurance (Revised)} = \text{AIC}/\$ 1.125 \text{ million} \times \text{AP}$$

Where;

$$\text{AIC} = \text{Adjusted Insurance Component as per IDC Test}$$

$$\text{AP} = \text{Actual Premium}$$

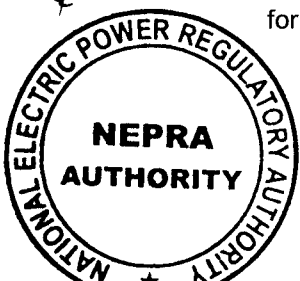
#### Adjustment due to custom duties and Interest during Construction

82. Debt Service, Return on Equity and ROE during construction shall be made on account of actual variation in customs duties and Interest During Construction with reference to the estimated figures of USD 6.510 million and USD 7.3961 million respectively.

#### II) Pass-Through Items

No provision for income tax has been accounted for in the tariff. If AGL is obligated to pay any tax on its income, the exact amount paid by the company may be reimbursed by NTDC to AGL 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, AGL may also submit to NTDC details of any tax shield savings and NTDC may deduct the amount of these savings from its payment to AGL on account of taxation.

Withholding Tax is also 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% equity according to the following formula:



Withholding Tax Payable =  $[15\% * (E_{(REF)}) + ROEDC_{(Ref)}] * 7.5\%$  (or applicable rate)

Where:

$E_{(REF)}$  = Reference Equity (US\$ 29.72 million x 60)

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

Note: In case of foreign equity withholding tax calculated according to the above formula shall be adjusted for variation in currency (US\$ to rupee). The adjustment on account of exchange rate variation (US\$/PKR) shall also be applicable to the Foreign component of the equity.

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.

#### Indexations

The following indexations shall be applicable to reference tariff.

#### Indexation applicable to O&M

83. In future the 50% of Fixed O&M part of Capacity Charge will be adjusted on account of local Inflation (WPI) and 50% 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 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:

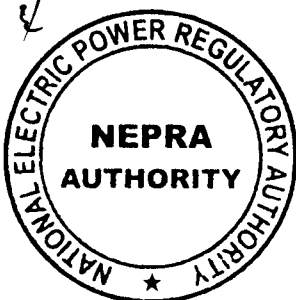
a) Fixed O&M

$F O\&M_{(LREV)}$  = Rs. 0.1517 / kW / Hour \* 50% \*  $WPI_{(REV)} / 117.80$

$F O\&M_{(FREV)}$  = Rs. 0.1517 / kW / hour \* 50% \*  $US CPI_{(REV)} / 199.8 * ER_{(REV)} / 60$

Where:

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



c) Adjustment for KIBOR variation

84. 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 6-monthly KIBOR according to the following formula:

$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 8.54\%) / 4$$

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 < 8.54%. 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 after availing the grace period.

d) Fuel Price Variation

85. The Variable 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 the Attock Petroleum Ltd. In this regard, the variation in AGL's allowed rate relating to fuel cost shall be revised according to the following formula:

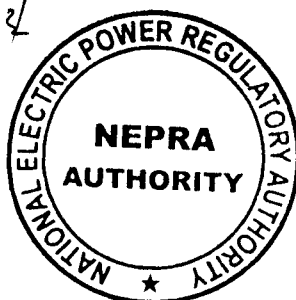
$$FC_{(Rev)} = Rs.4.3624 \text{ per kWh} * FP_{(Rev)} / Rs. 22140.07 \text{ per Ton}$$

Where:

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

$FP_{(Rev)}$  = The new price of RFO as determined per price mechanism given at para 69 of this determination.

86. 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 AGL's request for adjustment in accordance with the requisite indexation mechanism stipulated herein.



ORDER

87. Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, Attock Gen Limited (AGL) 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 tariff for delivery of electricity to CPPA of NTDC for procurement on behalf of EX-WAPDA Distribution Companies.

Reference Tariff

Tariff Components	Year 1 to 10	Year 11 to 25
Capacity Charge (PKR/kW/Hour)		
Fixed O&M	0.1517	0.1517
Insurance	0.0494	0.0494
Working Capital	0.0441	0.0441
Debt Service	0.8858	-
Return on Equity	0.2017	0.2017
ROE during Construction	0.0385	0.0385
<b>Total Capacity Charge</b>	<b>1.3712</b>	<b>0.4854</b>
Energy Charge Rs./kWh		
Fuel Cost Component	4.3624	4.3624
Variable O&M – Foreign	0.3348	0.3348
Variable O&M – Local	0.0971	0.0971

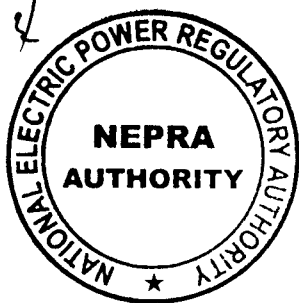
Note:

- Capacity Charge Rs./kW/hour is applicable to dependable capacity at the delivery point.
- Dispatch criterion will be the Energy Charge.
- The above tariff is applicable for a period of 25 years commencing from the date of the Commercial Operation.
- Component wise tariff is indicated at Annex-I and Debt Service Schedule at Annex-II

I) One Time Adjustment

Adjustment due to variation in net capacity

88. The reference tariff has been determined on the basis of minimum net capacity of 156.138 Mw at delivery point at mean site conditions. All the tariff components except fuel cost component shall be adjusted at the time of COD based upon the IDC tests to be carried out for determination of contracted capacity. If the IDC is established higher than 156.138 MW, the adjustments shall be made according to the following formula:





i)	Revised Fixed O&M	=	0.1517/tested IDC x 156.138 MW
ii)	Insurance	=	0.0494/tested IDC x 156.138 MW
iii)	Debt Service	=	0.8858/tested IDC x 156.138 MW
iv)	Return on Equity	=	0.2017/tested IDC x 156.138 MW
v)	ROE during Construction	=	0.0385/tested IDC x 156.138 MW
vi)	Variable O&M - Foreign	=	0.3348/tested IDC x 156.138 MW
vii)	Variable O&M – Local	=	0.0971/tested IDC x 156.138 MW

#### Adjustment in Insurance Component

89. Insurance component of reference tariff shall be adjusted as per actual on yearly basis upon production of authentic documentary evidence by AGL according to the following formula:

$$\text{Insurance (Revised)} = \text{AIC}/\$ 1.125 \text{ million} \times \text{AP}$$

Where;

$$\text{AIC} = \text{Adjusted Insurance Component as per IDC Test}$$

$$\text{AP} = \text{Actual Premium}$$

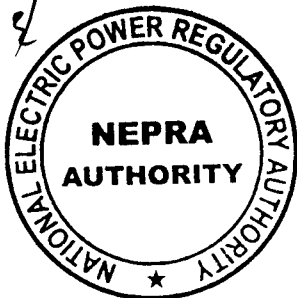
#### Adjustment due to custom duties and Interest during Construction

90. Debt Service, Return on Equity and ROE during construction shall be made on account of actual variation in customs duties and Interest During Construction with reference to the estimated figures of USD 6.510 million and USD 7.3961 million respectively.

#### II) Pass-Through Items

No provision for income tax has been accounted for in the tariff. If AGL is obligated to pay any tax on its income, the exact amount paid by the company may be reimbursed by NTDC to AGL 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, AGL may also submit to NTDC details of any tax shield savings and NTDC may deduct the amount of these savings from its payment to AGL 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% equity according to the following formula:

Withholding Tax Payable +  $[15\% * (E_{(REF)} + ROEDC_{(Ref)}) * 7.5\%$  (or applicable rate)

Where:

$E_{(REF)}$  = Reference Equity (US\$ 29.72 million x 60)

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

Note: In case of foreign equity withholding tax calculated according to the above formula shall be adjusted for variation in currency (US\$ to rupee). The adjustment on account of variation in exchange rate (US\$/PKR) shall also be applicable on the Foreign component of the equity.

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.

#### Indexations

The following indexations shall be applicable to reference tariff.

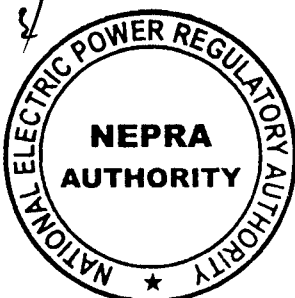
#### Indexation applicable to O&M

91. In future the 50% of Fixed O&M part of Capacity Charge will be adjusted on account of local Inflation (WPI) and 50% 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 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:

a) Fixed O&M

$$F O\&M_{(LREV)} = \text{Rs. } 0.1517 \text{ per kW per Hour} * 50\% * WPI_{(REV)} / 117.80$$

$$F O\&M_{(FREV)} = \text{Rs. } 0.1517 \text{ per kW per hour} * 50\% * US CPI_{(REV)} / 199.8 * ER_{(REV)} / 60$$



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

c) Adjustment for KIBOR variation

92. 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 6-monthly KIBOR according to the following formula:

$$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 8.54\%) / 4$$

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 < 8.54%. 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 after availing the grace period.

d) Fuel Price Variation

93. The Variable 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 the Attock Petroleum Ltd. In this regard, the variation in AGL's allowed rate relating to fuel cost shall be revised according to the following formula:

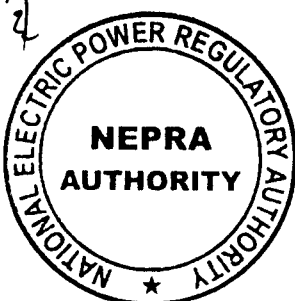
$$FC_{(REV)} = Rs.4.3624 \text{ per kWh} * FP_{(REV)} / Rs. 22140.07 \text{ per Ton}$$

Where:

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

$FP_{(REV)}$  = The new price of RFO as determined per price mechanism given at para 69 of this determination.

94. Adjustment on account of local inflation, foreign inflation, foreign exchange rate variation, KIBOR variation and fuel price variation will be approved and announced by



**Attock Gen Limited**  
**Specified Tariff**

Year	Variable Charge (PKR/kWh)			Capacity Charge (PKR/kW/Hour)									Total	
	Fuel	Variable O&M	Total	Fixed O&M	Insurance	Financing Cost on Working Capital	Return on Equity	Return on Equity for Construction Period	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Total	Fixed Cost at 60% Plant Factor Rs./kWh	Cents/kWh
1	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.2965	0.5893	1.3891	2.3152	11.8490
2	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.3322	0.5536	1.3891	2.3152	11.8490
3	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.3722	0.5135	1.3891	2.3152	11.8490
4	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.4171	0.4687	1.3891	2.3152	11.8490
5	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.4673	0.4184	1.3891	2.3152	11.8490
6	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.5236	0.3621	1.3891	2.3152	11.8490
7	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.5867	0.2990	1.3891	2.3152	11.8490
8	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.6574	0.2283	1.3891	2.3152	11.8490
9	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.7366	0.1491	1.3891	2.3152	11.8490
10	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180	0.8254	0.0604	1.3891	2.3152	11.8490
11	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
12	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
13	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
14	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
15	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
16	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
17	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
18	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
19	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
20	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
21	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
22	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
23	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
24	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
25	4.3624	0.4319	4.7943	0.1517	0.0494	0.0441	0.2017	0.0385	0.0180			0.5034	0.8389	9.3886
<b>Levelized Tariff (1-25 Years)</b>			<b>4.7943</b>	<b>0.1517</b>	<b>0.0494</b>	<b>0.0441</b>	<b>0.2017</b>	<b>0.0385</b>	<b>0.0180</b>	<b>0.3231</b>	<b>0.2765</b>	<b>1.1029</b>	<b>1.8382</b>	<b>11.0542</b>

