



Registrar

# National Electric Power Regulatory Authority

## Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad  
Ph: 051-9206500, 9207200, Fax: 9210215  
E-mail: registrar@nepra.org.pk

No. NEPRA/TRF-125/SECL-2009/10369-10371  
November 23, 2012

Subject: **Decision of the Authority in the matter of Motion for Leave for Review filed by Sapphire Electric Company Ltd. (SECL) Pursuant to Rule 16(6) of NEPRA (Tariff Standards and Procedure) Rules, 1998 against the Decision of the Authority regarding Adjustments in Generation Tariff at Commercial Operation Date [Case No. NEPRA/TRF-125/SECL-2009(3)] - 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,

In continuation of this office letter No. NEPRA/TRF-125/SECL-2009/8457-59 dated September 21, 2011 whereby decision of the Authority in the matter of adjustments in Generation Tariff of Sapphire Electric Company Ltd. at Commercial Operation Date was sent. Please find enclosed herewith the decision of the Authority along with Annex-I, I-A & II (16 pages) in the matter of Motion for Leave for Review filed by Sapphire Electric Company Ltd. (SECL) on September 30, 2011 against NEPRA's decision dated 21.09.2011 in Case No. NEPRA/TRF-125/SECL-2009.

2. The Decision of the Authority 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) read with Rule 16(11) of the National Electric Power Regulatory Authority Tariff (Standards and Procedure) Rules, 1998.

3. Please be informed that the Order of the Authority earlier intimated vide para 11 of the Authority's Decision dated September 21, 2011, stands modified/amended to the extent as detailed in para 7 of the subject decision of the Authority along with Annex-I, I-A & II. Please note that Order of the Authority at para 7 along with Annex-I, I-A & II is required to be notified in the official Gazette.

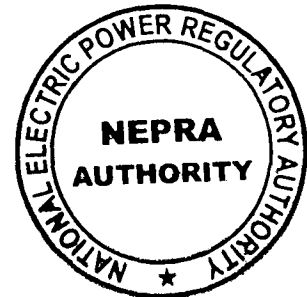
Enclosure: As above

( Syed Safer Hussain )

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

CC:

1. Secretary, Cabinet Division, Cabinet Block, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.





**DECISION OF THE AUTHORITY IN THE MATTER OF  
MOTION FOR LEAVE FOR REVIEW FILED BY SAPPHIRE ELECTRIC POWER  
COMPANY LIMITED (SECL) PURSUANT TO RULE 16(6) OF NEPRA (TARIFF  
STANDARDS AND PROCEDURE) RULES, 1998 AGAINST THE DECISION OF THE  
AUTHORITY REGARDING ADJUSTMENTS IN GENERATION TARIFF AT  
COMMERCIAL OPERATIONS DATE  
CASE NO. NEPRA/TRF 125/SECL-2009(3)**

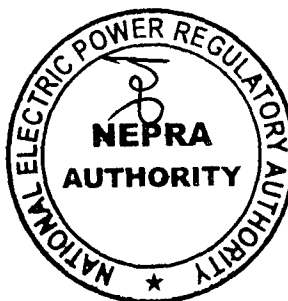
**1. Introduction**

1.1 Sapphire Electric Power Company Limited (SECL) (hereinafter referred as "Petitioner") is a generation licensee of National Electric Power Regulatory Authority, (hereinafter referred as the "Authority"). A decision of adjustments in generation tariff of the petitioner at Commercial Operation Date (COD) was given by the Authority on September 21, 2011. Being aggrieved with the said decision, the petitioner filed a motion for leave for review on September 30, 2011 under Rule 16(6) of NEPRA (Tariff Standards and Procedure) Rules, 1998 (hereinafter referred as the "Rules"). However, subsequent to filing the Motion for Leave for Review, the petitioner vide letter dated March 26, 2012 requested the Authority for an extension of required commercial operations date (RCOD) on the basis of extension granted by NTDC for 180 days and validated by PPB vide letter dated March 22, 2012. The hearing of the case was held on March 27, 2012.

1.2 The petitioner sought review to the extent of following items:-

- IDC be allowed at actual;
- Verified EPC Cost be accepted and allowed as New EPC Cost, net of balance encashed guarantee funds;
- SECL be allowed a reasonable rate of Return, rather than be penalized for factors beyond its control;
- Adjustments in Non-EPC and Working Capital components be allowed, as requested;
- Onetime adjustment due to variation in net capacity be allowed, in the face of frequency curve compilation;
- HSD Fuel Component Formula be incorporated on specific gravity at 25 degree Celsius.

*Handwritten signature*  
2012/04



*Handwritten signature*



## 2. Construction Period and its Impact on IDC and ROEDC

- 2.1 In the Motion for Leave for Review, the petitioner has submitted that IDC, ROEDC should be allowed on actual basis as per earlier determinations of the Authority and also required to recognize difference between COD and RCOD stating that the Authority did not dwell upon the categorical difference between COD and RCOD as, in fact, the crucial date for True up tariff was COD and not RCOD.
- 2.2 Subsequent to Motion for Leave for review and before public hearing, the Petitioner vide letter No. SECL/NEPRA/373 dated March 26, 2012 submitted that subsequent to their submission of Motion for Leave for Review, the Power Purchaser has extended their RCOD by 180 days after unanimous approval from Board of NTDC and PPIB, therefore requested the Authority to consider this information along with their Motion for Leave for Review.
- 2.3 The Authority has noted that petitioner's concerns were addressed in the determination dated September 21, 2011 and the relevant extracts from the determination are as under:

Para 3.2.13 read as follows:

**".....PPA is an applicable document and its provisions are supposed to be adhered to by the licensees and need to be considered by the Authority. Further, the tariff determinations of SECL specified the following as terms and conditions of tariff:**

**"General assumptions of SECL which are not covered in this determination may be dealt with in the PPA according to its standard terms."**

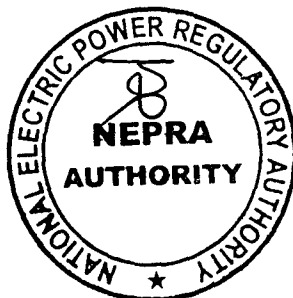
**The PPA of SECL defines RCOD as:**

***"The date that is twenty eight (28) months following the date on which financial closing occurs, as such date may be extended pursuant to section 6.5 or section 8.1 (b) or by reason of a Force Majeure Event."***

**In view of the applicability of PPA, RCOD worked out in accordance with its provisions, which has not been covered by the SECL's determination, is required to be followed."**

Para 3.2.20 read as follows:

**"In view of the arguments detailed above, the Authority**



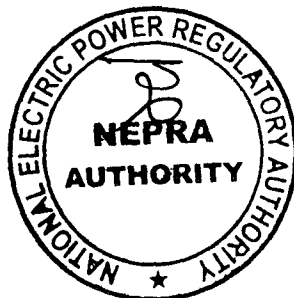


**is of the opinion that there are no grounds in the case of SECL, justifying deviation from the already established principle of determining maximum construction period according to the provisions of PPA."**

Para 7.2 read as follows:

**"In view of the considerations discussed in Para 3.2 for IDC the Authority has restricted the construction period for the computation of ROEDC up to RCOD, which is also consistent with previous decisions of the Authority for the computation of ROEDC."**

- 2.4 The Authority while considering the request of the petitioner in the light of the above provisions of the determination and its other decisions on the subject directed PPIB and NTDC Boards vide letter No.-NEPRA/TRF-125-SECL-2009/4362 dated May 11, 2012 and NEPRA/TRF125-SECL-2009/4362 dated May 11, 2012 respectively, to submit the Reasons, Legal basis and detailed quantification for allowing the increase in Construction period.
- 2.5 PPIB vide letter No.1(102) PPIB/12/PRJ dated May 16, 2012 submitted the basis and considerations along with its reservations for allowing the 180 days extension in RCOD and consequent changes in PPA by the Board of PPIB in its board meeting.
- 2.6 NTDC vide letter No, GM/WPPO/CE-II/MT-IV/Sapphire/ 4281 dated May 22, 2012 submitted that the case was discussed in 58<sup>th</sup>, 59<sup>th</sup>, 61<sup>st</sup> and 62<sup>nd</sup> meetings of Board of Directors of NTDC and was referred to independent legal advisors for their legal opinion regarding legal validity, extensions in RCOD and subsequent changes in relevant clauses of PPA and after considering the legal opinion and peculiar facts and circumstances of the case, the Board of NTDC unanimously decided to allow 180 days extension in construction period of SECL.
- 2.7 The Authority carefully considered and examined all the facts of the case including due diligence by NTDC before allowing increase in construction period (RCOD), documentary evidences submitted by the petitioner, power purchaser (NTDC) and PPIB along with comments of stake holders during the proceedings of the case, and hereby decides to accept extension in RCOD by 180 days as approved by the Boards of NTDC and PPIB, against the requested extension of 350 days by the petitioner. Accordingly the IDC and ROEDC of the project have been revised to extent of 180 days increase in construction period.





**3. Verified EPC Cost be accepted and allowed as New EPC Cost, net of balance encashed guarantee funds**

3.1 Petitioner while requesting the recovery of full amount of EPC cost prayed the Authority that:

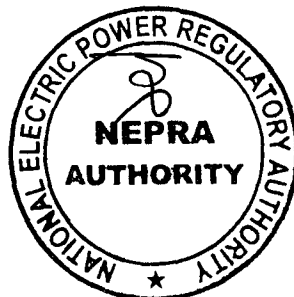
**"The EPC Contractor's guarantees encashed /recovered by SECL were wholly inadequate for covering the cost over-runs consequential upon the aforesaid FMEs, as shown hereabove. SECL is also exposed to risks associated with encashment of guarantees, wherein the successors of the EPC contractor is demanding from SECL the return of the encashed performance and warranty bonds. Therefore, this exposes SECL to potential litigation expenses ranging in millions of dollars. SECL is also carrying accrued obligations of approximately US\$ 10 million and is at risk of default against these obligations."**

3.2 The petitioner's request has been examined in the light of Authority's earlier decisions. Relevant extracts from the decision of the Authority dated September 21, 2011 on this matter are as under:

Para 3.1.5 read as follows:

**"The Authority has also observed that SECL has failed to establish that allowing / adjustment of increase in EPC cost was within the scope of tariff adjustment at COD stage. While making adjustments at COD stage, the Authority's scope is limited to remaining within the boundaries set by it in the original determination / review decisions. The Authority therefore is of the view that increase in EPC cost is not subject to adjustment at COD stage."**

3.3 The Authority considered all the grounds agitated by the petitioner and in its opinion, the petitioner failed to provide any additional evidence, to establish its claim on account of increased EPC cost, which was not considered by the Authority in its decision dated August 17, 2011. The Authority already decided this issue in its determination dated September 21, 2011 as referred in paragraph 3.2 above after consideration of all relevant facts, circumstances and scope of adjustments at COD stage, therefore, the Authority is constrained to allow any relief sought by the petitioner on account of EPC.



4



**4. Adjustments in Non-EPC and Working Capital:**

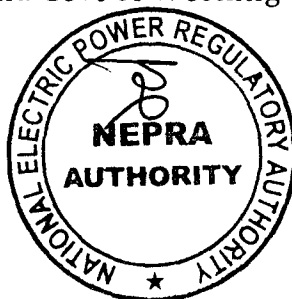
4.1 SECL requested the Authority to allow increase in Non-EPC and Working Capital on account of the following:

- i) O&M cost during construction period: which was allowed in the original determination dated August 03, 2006 but was subsequently disallowed in the determination dated November 22, 2007.
- ii) First fill of lubes and chemicals: The Authority vide determination dated 22<sup>nd</sup> November 2007, cost of US\$ 0.5 million for first fill of lubes and chemicals was disallowed despite having originally been allowed as Non-EPC item in the Authority's determination dated 3<sup>rd</sup> August 2006, as it considered it as part of EPC contract. However, after bankruptcy of EPC contractor, this additional cost has been incurred by the petitioner.
- iii) Insurance during construction period: It should be allowed after allowing actual exchange rate during construction period on 1.35% of EPC cost in US\$.
- iv) Working capital in Non-Firm Delivery Months: Actual HSD cost should be allowed instead of base cost of HSD.

4.2 The Authority carefully examined the petitioner's request and is of view that this issue has already been settled and decided by the Authority in its decision dated September 21, 2011 and relevant extracts are as under:

**"3.7.2 SECL's request being outside the scope of COD and inconsistent with the other similar/comparable project is not accepted."**

4.3 The Authority considered all the above grounds agitated by the petitioner and in its opinion, the petitioner failed to provide any fresh or additional evidence, to establish its claim on account of increased Non-EPC cost and Cost of Working Capital, which was not considered by the Authority in its decision dated September 21, 2011. Further a fresh petition has been filed by the petitioner on "working capital in non firm delivery months," which is under consideration of Authority as a separate case. Therefore, the Authority has decided not to consider the request of the petitioner on account of Non-EPC cost and Cost of Working Capital.





**5. Variation in Net Capacity:**

5.1 The petitioner has requested the Authority to allow variation in net capacity (Onetime adjustment) as SECL's plant is situated in the load centre, where the frequency of the grid remains depressed most of the time, affecting the overall output of the complex. Impact of depressed frequency was acknowledged by the Independent Engineer at the time of Initial Dependable Test, the frequency curve was applied by the independent Engineer to determine the Contract capacity at 212,107 MW - whereas, SECL's tested capacity was close to 209 MW without application of frequency curve. The petitioner has further submitted that either frequency curves may be disregarded in onetime adjustment due to variation in net capacity or alternatively, SECL be allowed a onetime cost of evaporative coolers to boost the output to the approved contract capacity figure of 212.107 MW.

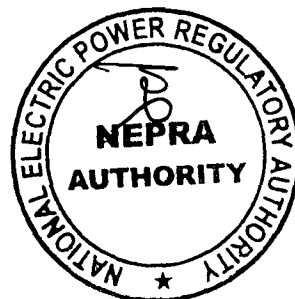
5.2 The Authority carefully considered the above mentioned plea of the petitioner in the light of its determinations and decisions and found that no mechanism was provided in the determinations for the requested adjustment. Since, this request is outside the scope of COD adjustments and is also inconsistent with the other similar projects, therefore, not accepted by the Authority.

**6. HSD Fuel Component Formulae be incorporated on specific gravity at 25 degree Celsius.**

6.1 The petitioner has requested following adjustments:

- Reference values for GCV values and GCV-NCV factor on Gas and HSD and HSD specific Gravity should be mentioned next to each respective fuel Price indexation formula.
- Formula for FCd (Rev) should apply fuel price indexation on HSD price per MMBTU basis, rather than the currently used HSD price per Liter basis.
- FCd (Rev) component definition should read as "the new price of HSD notified by the relevant Authority per litre of fuel adjusted for NCV-GCV factor, specific gravity and calorific value (Gross)".

6.2 The Authority considered the above mentioned plea of the petitioner in the light of its determinations and decisions and found that no mechanism was provided in the determinations for the requested adjustment. This request being outside the scope of COD adjustments, therefore, is not accepted by the Authority.



6

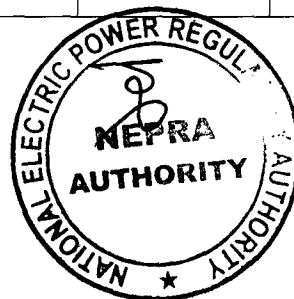


## 7 ORDER

Pursuant to Rule 16(11) of the NEPRA Tariff Standards & Procedure Rules, 1998, Sapphire Electric Company Limited (SECL) 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 Despatch Company Limited (NTDC) and SECL at the time of Commercial Operations Date (COD), the following tariff for delivery of electricity:

### REFERENCE TARIFF

Tariff Components	Year 1 to 10	Year 11 to 30	Indexation
<b>Capacity Charge (PKR/kW/h)</b>			
Fixed O&M - Foreign	0.0965	0.0965	US\$/PKR & US CPI
- Local	0.0529	0.0529	WPI
Insurance	0.0876	0.0876	US\$/PKR
Cost of working capital - Gas	0.0449	0.0449	KIBOR
- HSD	0.0961	0.0961	KIBOR
Debt service	1.3145	-	KIBOR
Return on equity	0.3964	0.3964	US\$/PKR
Return on equity during Construction	0.1061	0.1061	US\$/PKR
<b>Total Capacity Charge - Gas</b>	<b>2.0989</b>	<b>0.7843</b>	
<b>- HSD</b>	<b>2.1501</b>	<b>0.8356</b>	
<b>Energy Charge Rs./kWh</b>			
<b>For Operation on Gas</b>			
Fuel cost component	2.4538	2.4538	Fuel price
Variable O&M - Foreign	0.2583	0.2583	US\$/PKR & US CPI
<b>For Operation on HSD</b>			
Fuel cost component	14.6399	14.6399	Fuel price
Variable O&M - Foreign	0.3728	0.3728	US\$/PKR & US CPI







**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 30 years commencing from the date of the Commercial Operations.
- 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 SECL according to the following formula:

$$\text{Insurance Component (Revised)} = \text{Rs. } 0.0876 \text{ per kW per hour} / (1.35\% * \text{US\$ } 158.850 \text{ million}) * \text{AP}$$

Where;

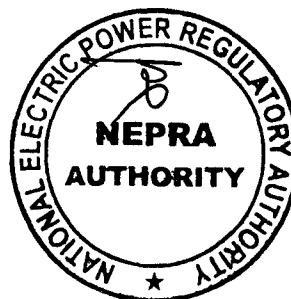
AP = Actual Premium subject to maximum of 1.35% of the adjusted EPC

**II) Pass-Through Items**

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

Withholding tax is also a pass-through item just like other taxes as indicated in the government guidelines for the determination of tariff for new IPPs. In revised tariff table withholding tax number is indicated as reference and NTDC shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 15% of reference equity i.e. hourly payment (Rs./kW/hour) spread over 12 months.

In case company does not declare a dividend in a particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what is paid in that year and the total entitlement as per the net return on equity) would be carried forward and accumulated so that the company is able to recover the same in hourly payments spread over 12 months.





months period as a pass-through from the power purchaser in future on the basis of the total dividend payout.

### 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 parity. 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, US CPI notified by the 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

$$F O\&M_{(LREV)} = \text{Rs. } 0.0529 \text{ per kW per hour} * WPI_{(REV)} / 145.36$$

$$FO\&M_{(FREX)} = \text{Rs. } 0.0965 \text{ per kW per hour} * US CPI_{(REV)} / 216.177 * ER_{(REV)} / \text{Rs. } 83.35$$

Where;

$F O\&M_{(LREV)}$  = The revised applicable fixed O&M local component of the capacity charge indexed with WPI

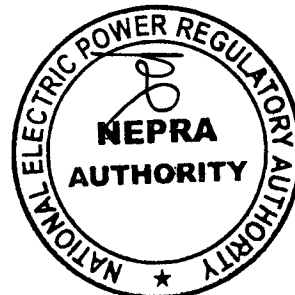
$F O\&M_{(FREX)}$  = The revised applicable fixed O&M foreign component of the capacity charge indexed with US CPI and exchange rate variations

$WPI_{(REV)}$  = The revised wholesale price index (manufacturers)

$WPI_{(REF)}$  = 145.36 wholesale price index (manufacturers) of October 2009 notified by the Federal Bureau of Statistics

$US CPI_{(REV)}$  = The revised US CPI (all urban consumers)

$US CPI_{(REF)}$  = 216.177 US CPI (all urban consumers) for the month of October 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 (Gas) will be as under:

$$V O\&M_{(REV)} = \text{Rs. } 0.2583 \text{ per kWh} * US CPI_{(REV)} / 216.177 * ER_{(REV)} / \text{Rs. } 83.35$$

Where;

$V O\&M_{(REV)}$  = The revised applicable variable O&M component of the energy charge indexed with US CPI and exchange rate variation.

$US CPI_{(REV)}$  = The revised US CPI (all urban consumers)

$US CPI_{(REF)}$  = 216.177 US CPI (all urban consumers) for the month of October 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

**AND**

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

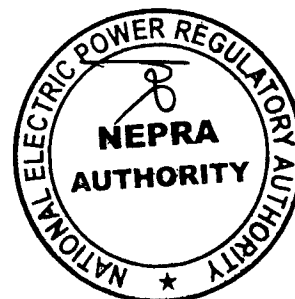
$$V O\&M_{(REV)} = \text{Rs. } 0.3728 \text{ per kWh} * US CPI_{(REV)} / 216.177 * ER_{(REV)} / \text{Rs. } 83.35$$

Where;

$V O\&M_{(REV)}$  = The revised applicable variable O&M component of the energy charge indexed with US CPI and exchange rate variation.

$US CPI_{(REV)}$  = The revised US CPI (all urban consumers)

$US CPI_{(REF)}$  = 216.177 US CPI (all urban consumers) for the month of October 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

**b) Adjustment for KIBOR variation**

The interest part of debt service 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-months KIBOR according to the following formula:

$$\Delta I_{(L)} = P_{(LREV)} * (KIBOR_{(REV)} - 12.60\%) / 4$$

Where;

$\Delta I_{(L)}$  = The variation in interest charges applicable corresponding to variation in KIBOR.  $\Delta I_{(L)}$  can be positive or negative depending upon whether  $KIBOR_{(REV)}$  is  $>$  or  $<$  12.60%. The interest payment obligation will be enhanced or reduced to the extent of  $\Delta I_{(L)}$  for each quarter under adjustment on quarterly basis.

$P_{(LREV)}$  = The outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculations date.

**c) Fuel Price Variation**

The variable charge part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations. In this regard, the variation in SECL's allowed rate relating to fuel cost shall be revised according to the following formula:

$$FCg_{(REV)} = \text{Rs. 2.4538 per kWh} * FPg_{(REV)} / \text{Rs.368.11 per MMBTU}$$

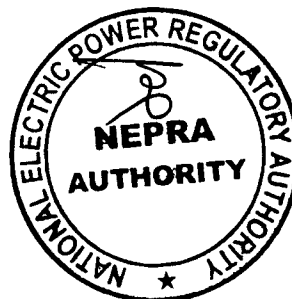
Where;

$FCg_{(REV)}$  = Revised fuel cost component of variable charge on Gas

$FPg_{(REV)}$  = The new price of gas as notified by the relevant authority per MMBTUs of fuel adjusted for LHV-HHV factor

**AND**

$$FCd_{(REV)} = \text{Rs.14.6399 per kWh} * Fpd_{(REV)} / \text{Rs.70.70 per Litre excluding GST}$$





Where;

$FCd_{(Rev)}$  = Revised fuel cost component of variable charge on HSD

$FPd_{(Rev)}$  = The new price of HSD/Litre (exclusive of GST) as notified by the relevant authority

**d) Adjustment in Return on Equity (ROE)**

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

$$ROE_{(Rev)} = \text{Rs. } 0.3964 \text{ per kW per hour} * ER_{(Rev)} / ER_{(Ref)}$$

Where;

$ROE_{(Rev)}$  = The revised ROE component of the capacity purchase price

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

$ER_{(Ref)}$  = The reference exchange rate of PKR 83.35 = 1 US\$.

**e) Adjustment on Return on Equity during Construction (ROEDC)**

ROEDC component of tariff will be adjusted on account of exchange rate variation according to the following formula;

$$ROEDC_{(Rev)} = \text{Rs. } 0.1061 \text{ per kW per hour} * ER_{(Rev)} / ER_{(Ref)}$$

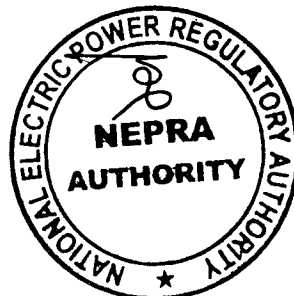
Where;

$ROEDC_{(Rev)}$  = The revised ROEDC component of the capacity purchase price

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

$ER_{(Ref)}$  = The reference exchanges rate of PKR 83.35= 1 US\$.

Adjustments on account of variation in WPI, US CPI, exchange rate, KIBOR and fuel price will be approved and announced by the Authority for immediate application in accordance with the requisite indexation mechanism stipulated herein.




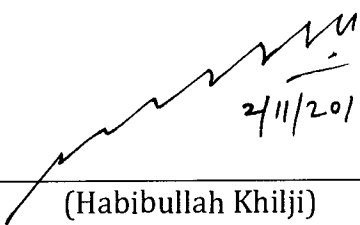


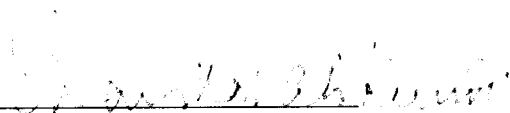
**IV) Terms and Conditions of Tariff**


- i) Use of Gas will be considered as primary fuel.
- ii) Dispatch criterion will be based on the energy charge.
- iii) General assumptions of SECL, which are not covered in this and earlier determinations, may be dealt with in the PPA according to its standard terms.

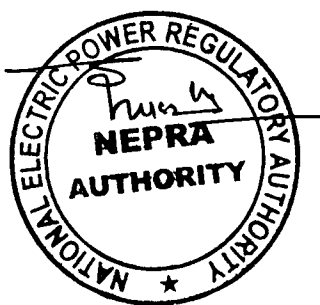
**AUTHORITY**

  
(Khawaja Muhammad Naeem)  
Member

  
(Habibullah Khilji)  
Member

  
(Shaukat Ali Kundi)  
Member

  
(Ghiasuddin Ahmed)  
A/Chairman

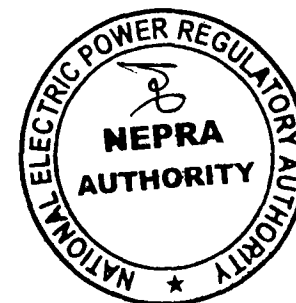


# Sapphire Electric Company Limited

## Modified Tariff (GAS)

Year	Variable Charge (PKR/kWh)			Capacity Charge (PKR/kW/Hour)									
	Fuel	Variable O&M	Total	Fixed O&M (Foreign)	Fixed O&M (Local)	Insurance	Working Capital Component	Return on Equity (ROE)	Return on Equity during Construction (ROEDC)	Withholding Tax	Loan Repayment	Interest Charges	Total Capacity Charge
1	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.3016	1.0129	2.1366
2	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.3515	0.9630	2.1366
3	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.4096	0.9049	2.1366
4	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.4774	0.8372	2.1366
5	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.5563	0.7582	2.1366
6	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.6483	0.6662	2.1366
7	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.7555	0.5590	2.1366
8	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	0.8804	0.4341	2.1366
9	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	1.0260	0.2885	2.1366
10	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	1.1957	0.1188	2.1366
11	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
12	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
13	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
14	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
15	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
16	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
17	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
18	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
19	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
20	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
21	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
22	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
23	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
24	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
25	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
26	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
27	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
28	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
29	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
30	2.4538	0.2583	2.7121	0.0965	0.0529	0.0876	0.0449	0.3964	0.1061	0.0377	-	-	0.8220
<b>Levelized Tariff (1-30 Years)</b>			<b>2.7121</b>	<b>0.0965</b>	<b>0.0529</b>	<b>0.0876</b>	<b>0.0449</b>	<b>0.3964</b>	<b>0.1061</b>	<b>0.0377</b>	<b>0.3824</b>	<b>0.4745</b>	<b>1.6789</b>

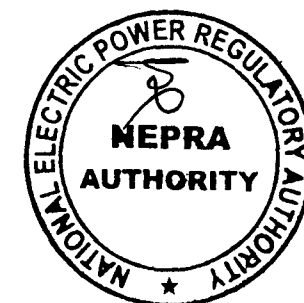
Net Capacity 212.107 MW  
 Reference Exchange Rate (PKR/US\$) 83.3500  
 Reference Fuel Price (Gas) LHV PKR 368.11 per MMCFT  
 Reference US CPI 216.1770 October 2009  
 Reference WPI (manufacturers) 145.3600 October 2009  
 KIBOR 12.60%  
 Net Efficiency 51.20%  
 Levelized Tariff (at 60% plant factor) Rs. per kWh 5.5102 (US cents/kWh) 6.6109



**Sapphire Electric Company Limited**  
**Modified Tariff (HSD)**

Year	Variable Charge PKR/kWh			Capacity Charge (PKR/kW/Hour)									
	Fuel	Variable O&M	Total	Fixed O&M (Foreign)	Fixed O&M (Local)	Insurance	Working Capital Component	Return on Equity (ROE)	Return on Equity during Construction (ROEDC)	Withholding Tax	Loan Repayment	Interest Charges	Total Capacity Charge
1	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.3016	1.0129	2.1878
2	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.3515	0.9630	2.1878
3	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.4096	0.9049	2.1878
4	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.4774	0.8372	2.1878
5	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.5563	0.7582	2.1878
6	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.6483	0.6662	2.1878
7	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.7555	0.5590	2.1878
8	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	0.8804	0.4341	2.1878
9	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	1.0260	0.2885	2.1878
10	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	1.1957	0.1188	2.1878
11	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
12	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
13	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
14	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
15	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
16	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
17	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
18	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
19	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
20	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
21	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
22	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
23	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
24	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
25	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
26	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
27	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
28	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
29	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
30	14.6399	0.3728	15.0127	0.0965	0.0529	0.0876	0.0961	0.3964	0.1061	0.0377	-	-	0.8733
<b>Levelized Tariff (1-30 Years)</b>			<b>15.0127</b>	<b>0.0965</b>	<b>0.0529</b>	<b>0.0876</b>	<b>0.0961</b>	<b>0.3964</b>	<b>0.1061</b>	<b>0.0377</b>	<b>0.3824</b>	<b>0.4745</b>	<b>1.7301</b>

Net Capacity 212.107 MW  
 Reference Exchange Rate (PKR/US\$) 83.3500  
 Reference Fuel Price (HSD) Rs. per litre 48.0300  
 Reference US CPI 216.1770 October 2009  
 Reference WPI (manufacturers) 145.3600 October 2009  
 KIBOR 12.60%  
 Net Efficiency 48.50%  
 Levelized Tariff (at 60% plant factor) Rs. per kWh 17.8963 (US cents/kWh) 21.4712





**Sapphire Electric Company Limited**  
**Debt Repayment Schedule**

Year	Quarter	Principal Amount Million Rs.	Repayment Million Rs.	Mark Up Million Rs.	Debt Service Million Rs.	Principal Amount Million Rs.	Annual Principal Repayment Rs/Kw/hr	Annual Interest Rs/kW/hr	Annual Debt Serving Rs/kW/hr
1	1	12,268	132	478	611	12,136			
	2	12,136	137	473	611	11,998			
	3	11,998	143	468	611	11,855			
	4	11,855	148	462	611	11,707	0.3016	1.0129	1.3145
2	5	11,707	154	457	611	11,553			
	6	11,553	160	451	611	11,393			
	7	11,393	166	444	611	11,227			
	8	11,227	173	438	611	11,054	0.3515	0.9630	1.3145
3	9	11,054	180	431	611	10,875			
	10	10,875	187	424	611	10,688			
	11	10,688	194	417	611	10,494			
	12	10,494	201	409	611	10,293	0.4096	0.9049	1.3145
4	13	10,293	209	401	611	10,084			
	14	10,084	217	393	611	9,866			
	15	9,866	226	385	611	9,641			
	16	9,641	235	376	611	9,406	0.4774	0.8372	1.3145
5	17	9,406	244	367	611	9,162			
	18	9,162	253	357	611	8,909			
	19	8,909	263	347	611	8,646			
	20	8,646	273	337	611	8,372	0.5563	0.7582	1.3145
6	21	8,372	284	327	611	8,088			
	22	8,088	295	315	611	7,793			
	23	7,793	307	304	611	7,486			
	24	7,486	319	292	611	7,168	0.6483	0.6662	1.3145
7	25	7,168	331	280	611	6,837			
	26	6,837	344	267	611	6,493			
	27	6,493	357	253	611	6,135			
	28	6,135	371	239	611	5,764	0.7555	0.5590	1.3145
8	29	5,764	386	225	611	5,378			
	30	5,378	401	210	611	4,977			
	31	4,977	416	194	611	4,561			
	32	4,561	433	178	611	4,128	0.8804	0.4341	1.3145
9	33	4,128	450	161	611	3,679			
	34	3,679	467	143	611	3,211			
	35	3,211	485	125	611	2,726			
	36	2,726	504	106	611	2,222	1.0260	0.2885	1.3145
10	37	2,222	524	87	611	1,698			
	38	1,698	544	66	611	1,153			
	39	1,153	566	45	611	588			
	40	588	588	23	611	(0)	1.1957	0.1188	1.3145

