



Registrar

# National Electric Power Regulatory Authority Islamic Republic of Pakistan

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No. NEPRA/TRF-318/CEPL-2015/18875-18877  
November 16, 2017

Subject: **Decision of the Authority in the matter of Tariff Adjustment at Commercial Operation Date (COD) of Crest Energy Pakistan Limited (CEPL) [Case No. NEPRA/TRF-318/CEPL-2015]**

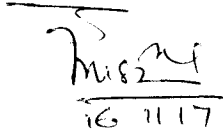
Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Annexure-I, II, III & IV (20 pages) in Case No. NEPRA/TRF-318/CEPL-2015.

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).

3. Order of the Authority along with Annexure-I, II, III & IV are to be notified in the official Gazette.

Enclosure: As above

  
( Syed Safeer Hussain )

Secretary  
Ministry of Energy  
'A' Block, Pak Secretariat  
Islamabad

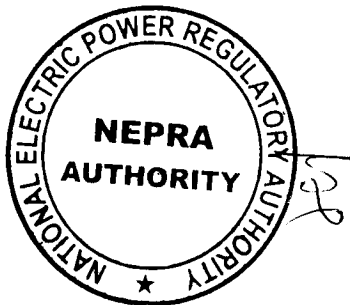
CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

**Decision Of The Authority In The Matter Of Tariff Adjustment At Commercial Operations Date  
(COD) Of Crest Energy Pakistan Limited (CEPL)**

**1. Introduction**

- 1.1 Crest Energy Pakistan Limited (hereinafter referred to as "CEPL") is a 100 MW Solar PV power plant located at Lal Sohanra in Cholistan, District Bahawalpur in the Province of Punjab established by the "Zonergy Company Limited". The letter of interest (LOI) was issued by the Punjab Power Development Board (PPDB) to Zonergy Company Limited on May 27, 2015 for the development of 9x100 MW solar PV power Projects in Quaid e Azam Solar Park Cholistan Pakistan. As per the LOI, Zonergy Company Limited has to maintain the shares in the special purpose vehicle established for the purpose in accordance with Punjab Power Generation Policy, 2006.
- 1.2 The SPV earlier requested to grant an upfront tariff for solar PV power plants that was announced by the Authority on Jan 22, 2015. Accordingly, CEPL was granted upfront tariff vide Authority's decision dated May 26, 2015. Meanwhile, the Authority in the matter of motion for leave for review filed by different stakeholders, revised upfront solar tariff vide its decision dated May 25, 2015. CEPL subsequently requested for the grant of this revised upfront solar tariff, which was granted vide Authority's decision dated Oct 21, 2015. As per the revised decision of the Authority, the determined levelized tariff of CEPL was Rs.14.8591/kWh (US Cents 14.1516/kWh).
- 1.3 CEPL later signed Engineering, Procurement, Construction ("EPC") contracts with M/S China First Metallurgical Group Co. Ltd. on June 27, 2015 and with M/S MCC Ruba International Construction Company (Pvt) Ltd. on June 27, 2015 to build, own and operate a 100 MW AC Solar powered electric generation facility to be located at Bahawalpur, Punjab, Pakistan. The company had signed Term Facility Agreement (TFA) with the Export-Import bank of China ("EXIM bank") and China Bohai Co Limited (CBC) on Dec 21, 2015. The Company achieved Financial Closing on Dec 28, 2015, which is confirmed by AEDB through its letter no. B/3/2/SPV/CEPL /15 dated Dec 28, 2015.
- 1.4 CEPL completed the construction, commissioning and testing of the Project and achieved Commercial Operations Date ("COD") on July 31, 2016 as was certified by the independent technical consultant M/S Tuv Nord and later confirmed by the CPPA through its letter no. CPPA/GM/CE-II/MT-IV/ CEPL /4258-75 dated Sep 08, 2016.



- 1.5 CEPL after commencing COD submitted its request for adjustment of relevant components of its tariff at commercial operations date (hereinafter referred to as "COD") through letter no. Ref: CEPL/F/S-02 dated April 03, 2017.
- 1.6 The information submitted by CEPL along with its request for adjustment of tariff at COD was incomplete. Accordingly, CEPL was directed through different communications to submit the required documents and information.
2. The summary of Project cost allowed to CEPL as per the upfront tariff determination dated January 22, 2015 is as under:

Description	US\$ million
EPC Cost	131.150
Duties and Taxes	4.737
Non EPC Cost	4.350
Project Development Cost	3.666
Insurance during construction	1.019
<b>CAPEX</b>	<b>144.922</b>
Financing Fees and Charges (3.5% of CAPEX Loan)	3.804
Interest during construction	2.705
<b>Total Project Cost</b>	<b>151.431</b>
<b>Reference Values:</b>	
Rupee-Dollar Parity	= Rs. 105/USD
US CPI (All Urban Consumers)	= 237.852
CPI (General)	= 198.7
Debt: Equity Ratio	= 75:25

- 2.1 Summary of the reference tariff as per the revised upfront tariff determination of CEPL dated Oct 21, 2015 is as follows:

**REFERENCE TARIFF**

Tariff Components	Year 1 to 10	Year 11 to 25	Levelized Tariff 1 to 25	Indexation
	Rs. /kWh			
O&M	2.4736	2.4736	2.4736	CPI General or US\$/PKR & US CPI
Insurance	0.9307	0.9307	0.9307	US\$/PKR
Return on Equity	4.7903	4.7903	4.7903	US\$/PKR
Debt Service	9.8451	0	6.6645	LIBOR, US\$/PKR, KIBOR
<b>Total</b>	<b>18.0397</b>	<b>8.1947</b>	<b>14.8591</b>	
<b>US Cents/kWh</b>	<b>17.1807</b>	<b>7.8044</b>	<b>14.1516</b>	



2.2 Certain one-time adjustments were provided by the Authority in its revised upfront tariff determination of CEPL dated Oct 21, 2015, which are abstracted and referred below;

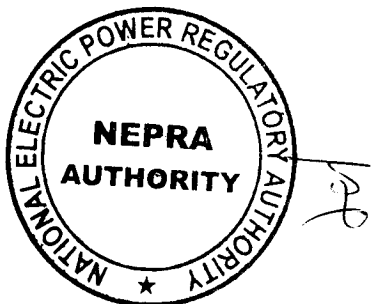
- i. *"Since the exact timing of payment to EPC contractor is not known at this point of time, therefore, an adjustment for relevant foreign currency fluctuation for the portion of payment in the relevant foreign currency will be made against the reference exchange rate of Rs.105/US\$. In this regard the sponsor will be required to provide all the necessary relevant details along with documentary evidence. The adjustment shall be made only for the currency fluctuation against the reference parity values.*
- ii. *The approved taxes and duties of US\$ 47,365/MW in the EPC cost will be adjusted as per actual at the time of COD stage adjustment of tariff on the basis of verifiable documentary evidence.*
- iii. *Interest during construction will be reestablished at the time of COD on the basis of actual Project financing and actual average LIBOR/KIBOR and applicable premiums.*
- iv. *In case sinosure fee or export credit agency fee on foreign financing is payable, the benchmark established in the coal upfront tariff will be applicable subject to maximum of 7% and appropriate adjustment in the Project cost shall be made."*

3. Detail of costs on account of one-time adjustments:

Based on the source documents verification, below is the component wise detail of Project costs on account of one-time adjustments;

3.1 EPC Cost:

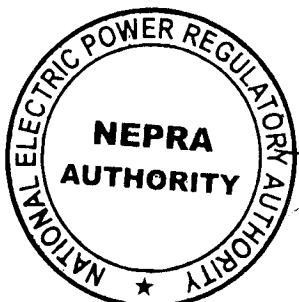
- 3.1.1 CEPL was allowed an EPC cost of US \$ 131.150 million as per the upfront tariff determination dated January 22, 2015, which was required to be adjusted for relevant foreign currency fluctuation for the portion of payment in the relevant foreign currency at the time of COD.
- 3.1.2 CEPL entered into offshore supply contract and onshore construction contract on June 27, 2016 with M/S China First Metallurgical Group Co. Ltd & M/S MCC Ruba International Construction Company (Pvt) Ltd for an amount of RMB 848.316 million and RMB 135.683 million respectively. Hence, the cumulative EPC contract value is RMB 984.000 million.



- 3.1.3 CEPL vide its COD adjustment request dated April 03, 2017 has claimed an EPC cost of RMB 984.000 million i.e. equivalent US \$ 152.122 million (Rs. 15,909.877 million) at Rs. 104.59/US \$ which includes paid EPC cost of US\$ 136.259 million (Rs. 14,244.298 million) at Rs. 104.54/US \$ whereas accrued cost against the EPC contract is claimed as US\$ 12.178 million (Rs. 1,278.713 million) at Rs. 105/US \$ and cost for unbilled work/retention of US\$ 3.684 million (Rs. 386.865 million) at reference exchange rate of Rs. 105/US \$. CEPL in support of its claim has submitted the copy of EPC contract, commercial invoices raised by the EPC contractor, debit advices, cheques, and bank statements, exchange rate sheets.
- 3.1.4 The submitted documentary evidences reflected that the invoices were raised by the EPC contractor in RMB with equivalent US dollar amount. Further, majority of the payment to the EPC contractor has been made in equivalent US \$ or PKR based on the rates prevailing on payment date.
- 3.1.5 As per the adjustment mechanism referred in the upfront tariff determination the exchange rate variation on the already allowed EPC cost of US \$ 131.150 million has to be allowed at COD, therefore the payments upto US \$ 131.150 million paid during the construction period have been considered for allowing exchange rate variation.
- 3.1.6 Accordingly, the Authority has decided to allow EPC cost of US\$ 131.150 million (Rs. 13,709.822 million) based on the actual weighted average exchange rate variation of Rs. 104.54/US \$ adjusting the reference exchange rate of Rs. 105/US \$.

3.2 **Taxes and Duties:**

- 3.2.1 Duties and taxes allowed in upfront tariff were estimated at US \$ 47,365/MW (i.e. US \$ 4.736 million) which were required to be adjusted as per actual at the time of COD tariff adjustment on the basis of verifiable documentary evidence of incidence of tax.
- 3.2.2 CEPL in its request dated April 03, 2017 for the adjustment of tariff at COD has submitted that the Project benefited from tax exemptions relating to custom duty, sales tax and income tax due to Government policy relating to promoting renewable energy power generation Projects.
- 3.2.3 CEPL further submitted that the custom duty on imports of plant and equipment with dedicated use in solar power plants is exempted according to fifth schedule to the Custom Act 1969 (IV of 1969) and the Sales Tax on imports of plant and equipment with dedicated use in solar power plants is exempted according to sixth schedule to the Sales Tax Act 1990 (vii of



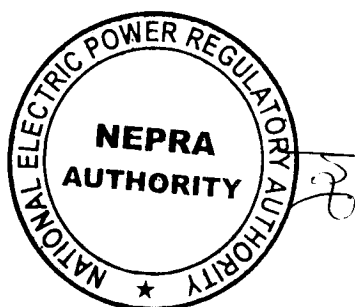
1990). Furthermore, for obtaining income tax exemption on imports of plant and equipment for establishment of solar power plant, M/S CEPL applied to the FBR under section 148 of Income Tax Ordinance 2001, for issuance of income tax exemption certificates, which were duly issued by FBR for each shipment separately.

- 3.2.4 CEPL has submitted that the applicable taxes on the Project company comprise of Sindh Cess and a withholding tax on EPC onshore cost and claimed US \$ 2.952 million (Rs. 309.158 million) as against the allowed duties and taxes of US \$ 4.736 million for allowed EPC cost of US \$ 131.150 million.
- 3.2.5 CEPL has submitted that the applicable taxes on the Project company comprise of Sindh Cess and a withholding tax on EPC onshore cost. CEPL claimed duties and taxes of US \$ 2.952 million (Rs. 309.158 million) against its claimed EPC cost of US \$ 152.122 million to be allowed on account of duties and taxes of US \$ 4.736 million for EPC allowed cost of US \$ 131.150 million, which included estimated taxes of Rs. 34.779 million on payable EPC cost.
- 3.2.6 CEPL in support of WHT claim has submitted the copies of WHT certificates and deposit challans along with bank statement. Further, in support of Sindh cess claim, CEPL has submitted the copies of commercial invoices, Good Declarations, Bill of Lading, cess payment challan and bank statements.
- 3.2.7 Based on documentary evidence submitted the paid duties and taxes are US\$ 2.591 million (Rs. 271.384 million) on EPC payments of US\$ 135.633 million (Rs. 14,178.770 million). Since in the upfront tariff the assessment of duties and taxes was made on the basis of US\$ 131.150 million EPC cost; therefore the paid duties and taxes of US\$ 2.591 million are required to be adjusted accordingly. In view thereof on the basis of allowed EPC cost of US\$ 131.150 million (Rs. 13,709.822 million), the adjusted duties and taxes of US\$ 2.234 million (Rs. 233.970 million) is hereby allowed.

3.3 Interest During Construction (IDC):

- 3.3.1 CEPL was allowed US \$ 2.705 million (Rs. 284.025 million) for interest during construction which was to be re-established at the time of COD on the basis of actual Project financing and actual average LIBOR/KIBOR and applicable interest premiums.
- 3.3.2 CEPL has claimed an IDC of Rs. 283.027 million (US \$ 2.708 million) based on 100% foreign financing at 3 months LIBOR plus 420/435 bps as against the allowed maximum limit of LIBOR plus 450 bps and has requested that the sharing in the interest saving to be allowed in

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the ratio of 60:40 with the power purchaser and the sponsor respectively in accordance with Authority's upfront tariff determination dated January 22, 2015.

3.3.3 In support of its claim CEPL has submitted the copies of financing agreement, bank advices, and bank statements.

3.3.4 Based on the verification of source documents, the Authority has noted that CEPL acquired loan in two currencies i.e. US\$ and RMB, as per details given below:

Lender	Currency	Amount of Loan in M	Actual Interest Rate	Actual Spread	Claimed Interest Rate	Claimed Spread (along with benefit of saving)
Export Import Bank of China	RMB	100.000	2.65%	0	LIBOR	4.2%
	US \$	40.810	LIBOR	4.2 %	LIBOR	4.2 %
China Bohai Bank Co Limited	US\$	56.190	LIBOR	4.35%	LIBOR	4.35%

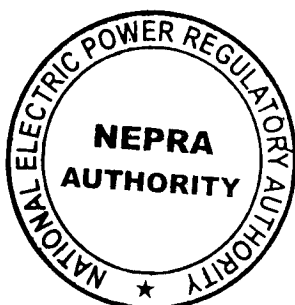
3.3.5 The Authority in the similar case of ASDPL provided following clarification vide letter vide letter No NEPRA/SAT-I/TRF-316/5463 dated April 22, 2016 on the treatment of RMB denominated loan specifically with regard to the benchmark interest rate and the applicable spread as follows:

*"...Since there is no provision of RMB denominated loan in Upfront Solar determination, therefore, it cannot be considered. However, RMB loan can be converted into equivalent USD loan and can be treated accordingly"*

3.3.6 In view of the above clarification the RMB loan has to be converted into equivalent US\$ loan for the purpose of calculating IDC. Accordingly the IDC paid on the US\$ loan and US\$ loan converted from RMB loan during the construction period verified through the documentary evidences is tabulated below;

Lender	Ccy	Amount of Loan	Loan US \$	Actual Interest Rate	Actual Spread	IDC actually Paid			Benefit of interest saving		Total IDC	
						RMB in M	US \$ in M	Rs in M	US \$ in M	Rs in M	US \$ in M	Rs in M
The Export Import Bank of China	RMB	100 000	15 196	2.65%	-	1 413	0 215	22 509	-	-	0 215	22 509
	US \$	40 810	40 810	LIBOR	4.20%	-	1 235	129 127	0 029	3 071	1 265	132 198
China Bohai Bank Co Limited	US\$	56 190	56 190	LIBOR	3.50%	-	1 058	110 600	0 012	1 292	1 070	111 892
Total			112.196				2.509	262.236	0.042	4.363	2.551	266.599

3.3.7 As indicated in the above table, the IDC, after converting the RMB loan to equivalent dollars, for the construction period on the actual debt drawdown of US \$ 112.196 million works out to be US\$ 2.509 million (equivalent Rs. 262.236 million). In line with the sharing policy the benefit of interest saving (40%) on US\$ loan i.e. US\$ 40.810 million and US\$ 56.190 million



has been worked out as US \$ 0.042 million (Rs. 4.363 million). Accordingly, based on the verification of the documentary evidence submitted the IDC (including interest saving) of US \$ 2.551 million (Rs. 266.599 million) is hereby allowed by the Authority.

3.3.8 Further, the detailed adjustment mechanism for the debt service component on a quarterly basis is given in the order part of this decision.

3.4 **Sinosure Fee:**

3.4.1 The Authority in the review motion decision dated May 25, 2015 against upfront solar tariff determination decided as under;

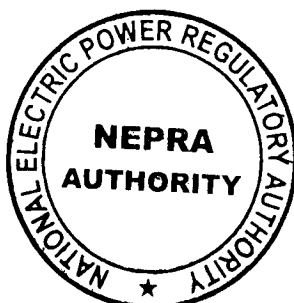
*"...the Authority has decided to allow the Sinosure fee for the solar power Projects under the upfront tariff. In case Sinosure fee or export credit agency fee on foreign financing is payable, the benchmark established in the coal upfront tariff will be applicable subject to maximum of 7% and appropriate adjustment in the Project cost shall be made at the time of COD."*

3.4.2 The benchmark given by the Authority in its decision regarding Reconsideration Request filed by Government of Pakistan in the matter of Upfront Tariff for Coal Power Projects dated June 26, 2014 is as under:

*"Under the foreign financing originating from Chinese banks, upfront Sinosure fee @7% on the total debt servicing has been included in the Project cost. Project cost will be adjusted at the time of COD on the basis of actual Sino sure fee subject to maximum of 7%. In case the sponsor managed better alternative Sino sure fee arrangement, the same will be considered at the time of COD."*

3.4.3 It has been noted that as per the LOI issued by PPDB dated May 27, 2015, the main sponsor of the Project is liable for all obligation and liabilities. The Petitioner in support of its claim for sinosure has submitted Term Facility Agreement, schedule of payment for the overseas investment insurance policy, performa invoice for premium payment for the first year, bank receipt for premium paid by Zonergy Company Limited.

3.4.4 The Petitioner at the time of COD tariff adjustment has submitted that it has to pay sinosure fee on foreign financing on annual basis, whereas the Authority has established the benchmark rate to a maximum of 7%. Considering the fact that it is not possible to estimate the exact amount of sinosure fee to be paid in future at the beginning of the Project, therefore





the estimated amount of Rs. 1,502.097 million in accordance with NEPRA benchmark rate i.e. 7% may be allowed.

3.4.5 Based on the documentary evidence submitted, the Authority noted that the schedule of payment submitted for the overseas investment insurance policy and other documents submitted reveals that the Petitioner has to pay the sinoure fee (@ 0.60% of the outstanding loan principle plus interest) on annual basis. Therefor the same is being adopted.

3.4.6 The documentary evidence submitted reveals that the sinosure fee paid during the construction period is US\$ 0.725 million. However, the sinosure fee @ 0.6% of the debt allowed (i.e. US\$ 112.680 million) plus interest during construction i.e. US\$ 2.508 million, works out to be US\$ 0.684 million (Rs. 72.199 million). Hence the Authority has decided to allow sinosure fee of US\$ 0.684 million (Rs. 72.199 million) for the construction period. The sinosure fee during operation period is being indicated as separate component in the tariff to be adjusted on quarterly basis due to interest rates fluctuations (i.e. LIBOR, interest rate notified by Export Import Bank of China). The detailed mechanism is given in the order part of the decision.

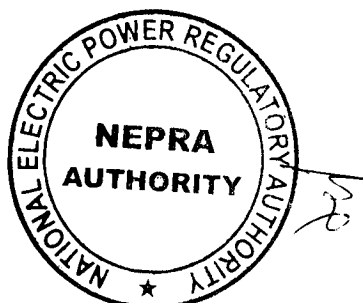
### 3.5 Summary of Allowed Project Cost

3.5.1 The Authority had originally determined Project cost of US \$ 151.431 million (equivalent Rs. 15,900.305 million). CEPL has claimed Project cost of US \$ 185.062 million (equivalent Rs. 19,365.900 million) at the COD stage. Based on decisions in the preceding paragraphs, the overall Project cost assessed at COD stage, works out as US \$ 149.458 million (equivalent Rs. 15,630.700 million). The summary of the approved costs is given below;

Project Cost Heads	Allowed		
	US \$	PKR	Ex Rate
EPC Cost	131.150	13,709.821	104.54
Taxes and Duties Related to EPC	2.234	233.970	104.72
Non EPC Cost	4.350	456.750	105.00
Project Development Cost	3.665	384.909	105.00
Insurance During Construction	1.019	107.010	105.00
Capex	142.418	14,892.460	104.57
Sinosure Fee	0.684	72.199	105.50
Interest During Construction	2.551	266.599	104.52
Financing Fees and Charges	3.804	399.439	105.00
Total Project Cost	149.457	15,630.700	104.58

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### 3.6 Financing of the Project

3.6.1 As per the upfront tariff determination dated January 22, 2015;

*"9.17 The Project s will be financed through debt and equity. Minimum equity requirement is 20%. There will be no limit on the maximum amount of equity; however, equity exceeding 30% of the total Project cost will be treated as debt. Debt may be raised in local as well as foreign currency and mix of local/foreign debt financing may also be allowed. The approved upfront tariff has been worked out on the basis of debt-equity ratio of 75:25 and 100% on foreign loans."*

3.6.2 The Petitioner has claimed adjustment of tariff at debt to equity ratio of 75.44:24.56. The Petitioner was accordingly directed to submit the documentary evidences for the actual debt drawdown and actual equity injection such as loan agreement, bank statements, information filed with SECP (including Form -3) and Audited Financial Statements for the year FY 2015-16. As per the submitted details the verified debt: equity ratio is 75.39:24.61, hence the same is adopted for COD tariff adjustments.

### 3.7 Insurance during operations:

3.7.1 The reference insurance component was Rs 0.9307/kWh. The Petitioner has claimed insurance component of Rs. 1.0586/kWh at the time of COD based on 1% of its claimed EPC cost. However, the upfront tariff determination states that:

*"The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser not exceeding 1% of the EPC cost will be treated as pass-through. Insurance component of reference tariff shall be adjusted annually as per actual upon production of authentic documentary evidence according to the following formula:*

AIC	=	$\frac{\text{Insurance} / \text{Period}}{\text{Period}} \times \text{Period}$
Where		
AIC	=	Adjusted Insurance Component of Tariff
Insurance	=	Reference Insurance Component of Tariff
Period	=	Reference Premium 1% of the EPC cost at Rs. 105/US\$.
Period	=	Actual Premium or 1% of the EPC cost in Pak Rupees on exchange rate prevailing on the 1st day of the insurance coverage period which ever is lower

3.7.2 The Petitioner was directed to submit the documentary evidences for the adjustment of insurance component allowed for the operation phase. The Petitioner in response submitted



copies of insurance policy for 1<sup>st</sup> year of operation i.e. from Aug 01, 2016 to July 31, 2017, premium payment invoice, cheque, bank statement against the insurance coverage from Jubilee General Insurance Company Limited.

3.7.3 The insurance coverage is as per the schedule VIII of PPA. The breakup of the insurance premium paid is as under;

Description	Gross Premium	Admin Surcharge	Sales Tax	FIF	Stamp Duty	Net Premium
	Rs.					
Property all risk	8,837,163	5,000	1,414,746	88,422	20	10,345,351
Consequential loss and Business Interruption Insurance	1,874,942	2,500	300,391	18,774	10	2,196,617
Machinery Breakdown and Business Interruption Insurance	6,962,221	2,500	1,114,355	69,647	10	8,148,734
Third party liability	1,700,309	5,000	272,849	17,053	10	1,995,222
<b>Total</b>	<b>19,374,635</b>	<b>15,000</b>	<b>3,102,342</b>	<b>193,896</b>	<b>50</b>	<b>22,685,923</b>

3.7.4 The insurance premium paid for the 1<sup>st</sup> year is Rs. 22.685 million. However, sales tax being adjustable in nature has not been considered. Accordingly, the allowed insurance cost for the first year of operations excluding sales tax is Rs. 19.583 million and the revised insurance component as per the given formula works out to be Rs. 0.1277/kWh and is duly allowed by the Authority.

3.8 Indexations of O&M:

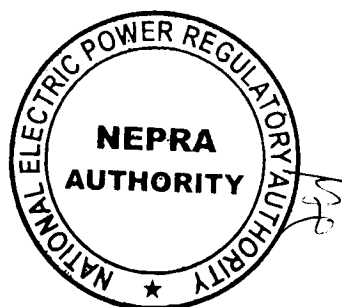
Following is the detail of indexations of O&M component of tariff:

O&M component	Year 1-25		
	O & M		
	Local O & M	Foreign O & M	Total O & M
Reference (Rs. /kWh)	0.3425	2.1311	2.4736
Revised (Rs. /kWh)	0.3573	2.1512	2.5086

Particulars	Revised		Reference	
	Index Number	Month	Index Number	Month
<b>Revised Values:</b>				
CPI (General)	207.3	June 2016	198.7	August 2014
US CPI	241.018	June 2016	237.852	August 2014
Exchange rate (PKR/US\$)	104.6	July 31, 2016	105	Reference Ex Rate

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4. **Order:**

- I. The Authority hereby approves the following upfront tariff for Crest Energy Pakistan Limited (CEPL) for delivery of electricity to the power purchaser based on Solar PV power plant of 100 MW established at Lal Sohanra in Cholistan, District Bahawalpur, Southern Punjab:

**Reference Tariff**

Description	Year 1-10	Year 11-25	Indexations
	Rs./kWh	Rs./kWh	
O&M	2.5086	2.5086	CPI , US CPI, PKR/US\$
Insurance	0.1277	0.1277	Actual on annual basis upto 1% of EPC Cost
ROE	4.6360	4.6360	PKR/US\$
Debt Servicing	9.6991	-	LIBOR/ interest rate as notified by Export Import Bank Of China
Sinosure fee			As indicated in Annex-II, III & IV

The Tariff Table and Debt Service Schedule are attached as Annex-I, Annex-II, Annex-III & Annex-IV.

II. **Adjustment in Insurance as per actual**

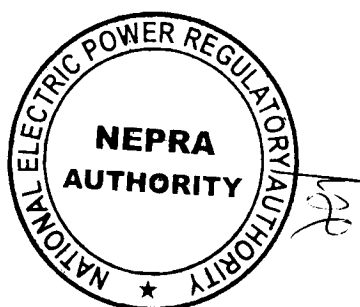
The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser not exceeding 1% of the EPC cost will be treated as pass-through. Insurance component of reference tariff shall be adjusted annually as per actual expenditure upon production of authentic documentary evidence to the satisfaction of Authority, according to the following formula:

AIC	=	$Ins_{(Ref)} / P_{(Ref)} * P_{(Act)}$
Where		
AIC	=	Adjusted Insurance Component of Tariff
$Ins_{(Ref)}$	=	Reference Insurance Component of Tariff
$P_{(Ref)}$	=	Reference Premium Rs. 19.583 million
$P_{(Act)}$	=	Actual Premium or 1% of the EPC cost in Pak Rupees on exchange rate prevailing on the 1st day of the insurance coverage period whichever is lower

III. **Indexations:**

The following indexations shall be applicable to the reference tariff:





i) **Indexation of Return on Equity (ROE)**

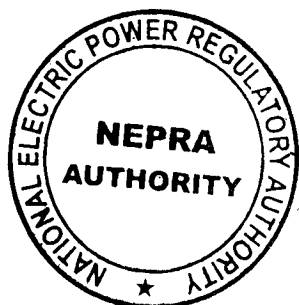
After COD, ROE component of tariff will be quarterly indexed on account of variation in PKR/US\$ parity according to the following formula:

$ROE_{(Rev)}$	=	$ROE_{(Ref)} * ER_{(Rev)} / ER_{(Ref)}$
Where;		
$ROE_{(Rev)}$	=	Revised ROE Component of Tariff
$ROE_{(Ref)}$	=	the reference ROE Component of Rs. 4.6360/kWh
$ER_{(Rev)}$	=	The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan
$ER_{(Ref)}$	=	the reference TT & OD selling rate at COD of Rs. 104.6/US dollar

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

The O&M component of tariff will be adjusted on account of local Inflation (CPI) and foreign inflation (US CPI) and exchange rate quarterly on 1st July, 1st October, 1st January and 1st April based on the latest available information with respect to CPI notified by the Pakistan Bureau of Statistics (PBS), 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 as per the following mechanism:

$L O\&M_{(REV)}$	=	$L O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
$F O\&M_{(REV)}$	=	$F O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$
Where:		
$L O\&M_{(REV)}$	=	the revised applicable O&M Local Component of tariff
$F O\&M_{(REV)}$	=	the revised applicable O&M Foreign Component of tariff
$L O\&M_{(REF)}$	=	the reference local O&M component of Rs. 0.3573/kWh
$F O\&M_{(REF)}$	=	the reference foreign O&M component of Rs. 2.1512/kWh
$CPI_{(REV)}$	=	the revised Consumer Price Index (General) published by Pakistan Bureau of Statistics.
$CPI_{(REF)}$	=	the reference Consumer Price Index (General) of 207.03 for the month of June 2016
$US CPI_{(REV)}$	=	the revised US CPI (All Urban Consumers) published by US Bureau of Labor Statistics
$US CPI_{(REF)}$	=	the reference US CPI (All Urban Consumers) of 241.018 for the month of June 2016



ER <sub>(REV)</sub>	=	the revised TT & OD selling rate of US dollar published by National Bank of Pakistan
ER <sub>(REF)</sub>	=	the reference TT & OD selling rate at COD of Rs. 104.6/US dollar

iii) **Indexation for Interest Rate Variation**

The interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to variation in interest rate as a result of variation in 3 months LIBOR or interest rate as notified by Export Import bank of China (whichever is applicable) according to the following formula;

$\Delta I$	=	<u>US\$ Loan :</u> $P_{(REV)} * (LIBOR_{(REV)} - 0.6858\%) / 4$ <u>US\$ Loan (converted from RMB):</u> $P_{(REV)} * (I_{(REV)} - 2.65\%) / 4$
Where:		
$\Delta I$	=	the variation in interest charges applicable corresponding to variation in 3 months LIBOR or interest rate as notified by Export Import bank of China. $\Delta I$ can be positive or negative depending upon whether LIBOR <sub>(REV)</sub> is > or < 0.6858% or I <sub>(REV)</sub> is > or < 2.65%. The interest payment obligation will be enhanced or reduced to the extent of $\Delta I$ for each quarter under adjustment applicable on quarterly basis.
P <sub>(REV)</sub>	=	The outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculation date. Period 1 shall commence on the date on which the 1 <sup>st</sup> installment is due after availing the grace period.
I <sub>(REV)</sub>	=	The revised interest rate as notified by Export Import bank of China

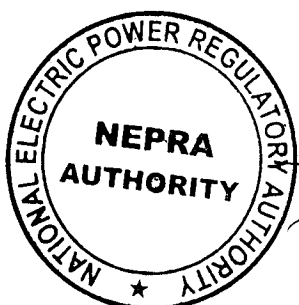
Note:

Foreign debt and its interest shall be adjusted on account of actual variation in PKR/US\$ over the applicable reference PKR/US\$ exchange rate on quarterly basis.

iv) **Indexation of Sinasure Fee component:**

The sinasure fee component will be adjusted quarterly due to variations in interest rate as a result of variation in 3 months LIBOR in case of US\$ currency loan and US\$ loan converted from RMB as per the following mechanism:

Sinasure Fee <sub>(REV)</sub>	=	<u>US\$ Loan</u> $[P_{(REV)} * 0.6\% + (I * 0.6\% * LIBOR_{(REV)} / LIBOR_{(REF)})] / \text{Annual Benchmark Energy (153.3 GWh)}$
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		<b>US\$ Loan (converted from RMB loan)</b>
		$[P_{(REV)} * 0.6\% + (I * 0.6\% * I_{(REV)} / I_{(REF)})] / \text{Annual Benchmark Energy (153.3 GWh)}$
Where;		
Sinosure Fee <sub>(REV)</sub>	=	The revised sinosure fee component
P <sub>(REV)</sub>	=	The outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculation date. Period 1 shall commence on the date on which the 1 <sup>st</sup> installment is due after availing the grace period.
I	=	The reference interest (as indicated in the attached debt service schedule to this order at Annex-II and III) for the relevant quarter
LIBOR <sub>(REV)</sub>	=	The revised 3 month LIBOR rate
LIBOR <sub>(REF)</sub>	=	The reference 3 months LIBOR rate
I <sub>(REV)</sub>	=	The revised interest rate for the relevant quarter as notified by Export Import Bank of China
I <sub>(REF)</sub>	=	The reference interest rate for the relevant quarter as notified by Export Import Bank of China

Note:

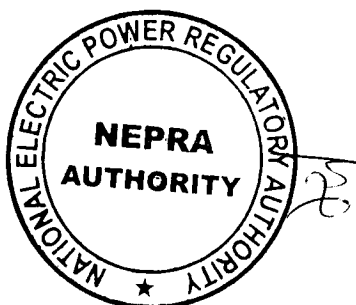
Foreign debt and its interest shall be adjusted on account of actual variation in PKR/US\$ over the applicable reference PKR/US\$ exchange rate on quarterly basis basis.

#### IV. Terms and Conditions of Tariff:

- Plant Capacity factor for this generation facility established in Bahawalpur (south region) will be 17.5%.
- In case the actual output exceeds the minimum output, the excess energy shall be charged in accordance with the following mechanism:

Net Annual Plant Capacity Factors	% of the prevalent tariff
Above 17.50% to 18.50%	75%
Above 18.50% to 19.50%	80%
Above 19.50%	100%

- The risk of lower solar irradiation will be on the Power Producer.
- The tariff control period will be 25 years from the date of commercial operation.



- v. The dispatch will be at appropriate voltage level from 11kV to 220kV mutually agreed between the Power Purchaser and the Power Producer.
- vi. Actual degradation subject to maximum of 0.7%/annum of initial power shall be allowed with the condition that degradation shall not be applicable if the generation remains in excess of the benchmark plant capacity factors i.e. 17.5% for South region. The following table is provided for illustrative purpose.

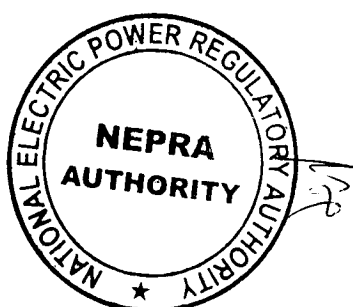
X<sub>0</sub> = Energy as determined by NEPRA in GWh

End of Year	Energy (GWh) at the busbar
1	$X_1 = X_0$
2	$X_2 = X_1 \times 0.993$
3	$X_3 = X_2 \times 0.993$
4	$X_4 = X_3 \times 0.993$
.....	

- (a) 0.993 corresponds to a degradation factor of 0.7% which will be changed according to the actual degradation in the respective year.
- (b) X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, ... are energy values at the end of year 1, year 2, year 3 and so on if degradation is allowed subject to conditions to be satisfied as noted above.
- (c) Reference tariff will be correspondingly adjusted in respective years.
- vii. In the Upfront Tariff no adjustment for certified emission reductions has been accounted for. However, upon actual realization of carbon credits, the same shall be distributed between the Power Purchaser and the Power Producer in accordance with the Policy for Development of Renewable Energy for Power Generation 2006, as amended from time to time.
- viii. The adjustment/indexation of upfront tariff will be made on the basis of the benchmarks assumed by the Authority for the Upfront Tariff in accordance with the indexation mechanism stipulated herein above and respective Upfront Tariff will be applicable to the Solar PV Power Projects coming under the applicable Upfront Tariff regime. No Project specific adjustments shall be taken into account.

4/


5/

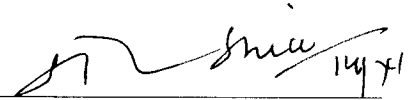


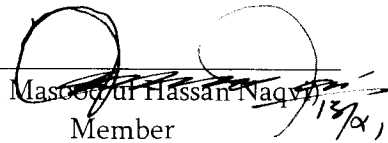


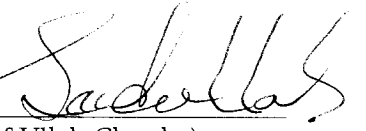
- ix. No provision for income tax, workers profit participation fund and workers welfare fund, any other tax, custom/excise duty or other duty, levy, charge, surcharge or other Governmental impositions, payable on the generation, sales, exploration has been accounted for in the tariff. If the company is obligated to pay any taxes the amount will be reimbursed by CPPA/DISCO on production of the original receipts of incidence of tax. However, any withholding tax on dividend will not be passed through under this tariff.
- x. General assumptions, which are not covered in this determination and National Electric Power Regulatory Authority Upfront Tariff (Approval & Procedure) Regulations, 2011, may be dealt with as per the standard terms of the Energy Purchase Agreement.
- V. The above Order of the Authority along with Annexes-I, Annex-II, Annex-III and Annex-IV will be notified in the Official Gazette in terms of Section 31(4) of the Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997.


**AUTHORITY**

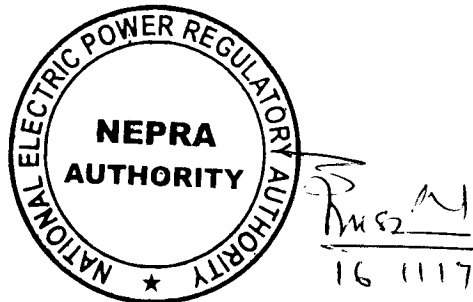
  
(Himayat Ullah Khan)  
Member

  
(Maj. (R) Haroon Rashid)  
Member

  
(Syed Masood ul Hassan Naqvi)  
Member

  
(Saif Ullah Chattha)  
Vice Chairman  
14.11.2017

  
(Brig. (R) Tariq Saddozai)  
Chairman



## Crest Energy Pakistan Limited Reference Tariff Table

Year	O&M	Insurance	Return on Equity	Debt Servicing	Sinosure	Total Tariff	
	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs. per kWh	¢ per kWh
1	2.5086	0.1277	4.6360	9.6991	0.4825	17.4539	16.6863
2	2.5086	0.1277	4.6360	9.6991	0.4437	17.4151	16.6493
3	2.5086	0.1277	4.6360	9.6991	0.4031	17.3745	16.6104
4	2.5086	0.1277	4.6360	9.6991	0.3605	17.3319	16.5697
5	2.5086	0.1277	4.6360	9.6991	0.3158	17.2873	16.5270
6	2.5086	0.1277	4.6360	9.6991	0.2690	17.2405	16.4823
7	2.5086	0.1277	4.6360	9.6991	0.2200	17.1914	16.4354
8	2.5086	0.1277	4.6360	9.6991	0.1686	17.1400	16.3863
9	2.5086	0.1277	4.6360	9.6991	0.1147	17.0861	16.3347
10	2.5086	0.1277	4.6360	9.6991	0.0582	17.0296	16.2807
11	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
12	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
13	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
14	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
15	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
16	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
17	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
18	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
19	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
20	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
21	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
22	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
23	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
24	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
25	2.5086	0.1277	4.6360	-	-	7.2723	6.9525
<b>Levelized</b>	<b>2.5086</b>	<b>0.1277</b>	<b>4.6360</b>	<b>6.5657</b>	<b>0.2165</b>	<b>14.0545</b>	<b>13.4364</b>

Installed Capacity (MW)	100.000
Minimum Annual Energy (GWh)	153.300
CPI (General) June 2016	207.300
US CPI (All Urban Consumers) June 2016	241.018
Exchange Rate (Rs./US\$)	104.600



### Crest Energy Pakistan Limited Debt Servicing Schedule

LIBOR 0.6858%  
 Spread (inclusive of benefit of interest saving @40%) 4.41%  
 Interest Rate 5.0958%

Period	Foreign Debt (US\$ @ LIBOR+4.20%)					Annual Principal Repayment	Annual Interest	Annual Debt Servicing	Sinosure Fee	
	Principal	Repayment	Mark-up	Balance	Debt Service					
	Rs./MW	Rs./MW	Rs./MW	Rs./MW	Rs./MW	Rs./kWh	Rs./kWh	Rs./kWh	Rs./MW	Rs./kWh
1	59,028,307	1,140,689	751,991	57,887,618	1,892,680	3.0337	1.9048	4.9385	371,690	0.2425
	57,887,618	1,155,221	737,459	56,732,397	1,892,680					
	56,732,397	1,169,938	722,742	55,562,459	1,892,680					
	55,562,459	1,184,842	707,838	54,377,617	1,892,680					
	59,028,307	4,650,690	2,920,031	54,377,617	7,570,720					
	54,377,617	1,199,936	692,744	53,177,681	1,892,680					
2	53,177,681	1,215,223	677,457	51,962,458	1,892,680	3.1913	1.7472	4.9385	342,337	0.2233
	51,962,458	1,230,704	661,976	50,731,753	1,892,680					
	50,731,753	1,246,383	646,297	49,485,370	1,892,680					
	54,377,617	4,892,247	2,678,474	49,485,370	7,570,720					
	49,485,370	1,262,261	630,419	48,223,109	1,892,680					
	48,223,109	1,278,342	614,338	46,944,767	1,892,680					
3	46,944,767	1,294,627	598,053	45,650,140	1,892,680	3.3570	1.5815	4.9385	311,458	0.2032
	45,650,140	1,311,120	581,560	44,339,020	1,892,680					
	49,485,370	5,146,350	2,424,370	44,339,020	7,570,720					
	44,339,020	1,327,823	564,857	43,011,197	1,892,680					
	43,011,197	1,344,739	547,941	41,666,458	1,892,680					
	41,666,458	1,361,870	530,810	40,304,587	1,892,680					
4	40,304,587	1,379,220	513,460	38,925,368	1,892,680	3.5314	1.4071	4.9385	278,977	0.1820
	44,339,020	5,413,652	2,157,068	38,925,368	7,570,720					
	38,925,368	1,396,790	495,890	37,528,577	1,892,680					
	37,528,577	1,414,585	478,095	36,113,992	1,892,680					
	36,113,992	1,432,606	460,074	34,681,387	1,892,680					
	34,681,387	1,450,857	441,824	33,230,530	1,892,680					
5	38,925,368	5,694,838	1,875,883	33,230,530	7,570,720	3.7148	1.2237	4.9385	244,808	0.1597
	33,230,530	1,469,340	423,340	31,761,190	1,892,680					
	31,761,190	1,488,058	404,622	30,273,132	1,892,680					
	30,273,132	1,507,016	385,665	28,766,116	1,892,680					
	28,766,116	1,526,214	366,466	27,239,902	1,892,680					
	33,230,530	5,990,628	1,580,093	27,239,902	7,570,720					
6	27,239,902	1,545,657	347,023	25,694,245	1,892,680	3.9078	1.0307	4.9385	208,864	0.1362
	25,694,245	1,565,348	327,332	24,128,896	1,892,680					
	24,128,896	1,585,290	307,390	22,543,606	1,892,680					
	22,543,606	1,605,486	287,194	20,938,120	1,892,680					
	27,239,902	6,301,782	1,268,939	20,938,120	7,570,720					
	20,938,120	1,625,939	266,741	19,312,182	1,892,680					
7	19,312,182	1,646,653	246,028	17,665,529	1,892,680	4.1108	0.8277	4.9385	171,053	0.1116
	17,665,529	1,667,630	225,050	15,997,899	1,892,680					
	15,997,899	1,688,875	203,805	14,309,024	1,892,680					
	20,938,120	6,629,097	941,624	14,309,024	7,570,720					
	14,309,024	1,710,390	182,290	12,598,634	1,892,680					
	12,598,634	1,732,180	160,500	10,866,454	1,892,680					
8	10,866,454	1,754,247	138,433	9,112,207	1,892,680	4.3243	0.6142	4.9385	131,278	0.0856
	9,112,207	1,776,595	116,085	7,335,612	1,892,680					
	14,309,024	6,973,412	597,308	7,335,612	7,570,720					
	7,335,612	1,799,228	93,452	5,536,384	1,892,680					
	5,536,384	1,822,149	70,531	3,714,234	1,892,680					
	3,714,234	1,845,363	47,317	1,868,872	1,892,680					
9	1,868,872	1,868,872	23,808	(0)	1,892,680	4.5489	0.3896	4.9385	89,438	0.0583
	7,335,612	7,335,612	235,109	(0)	7,570,720					
	7,335,612	7,335,612	235,109	(0)	7,570,720					
10	7,335,612	7,335,612	235,109	(0)	7,570,720	4.7851	0.1534	4.9385	45,424	0.0296



## Crest Energy Pakistan Limited

## Debt Servicing Schedule

LIBOR 0.6858%  
 Spread (inclusive of benefit of interest saving @40%) 5.01%  
 Interest Rate 5.6916%

Period	Foreign Debt (US\$ @ LIBOR+4.20%)					Annual Principal Repayment	Annual Interest	Annual Debt Servicing	Sinore Fee	
	Principal	Repayment	Mark-up	Balance	Debt Service					
	Rs./MW	Rs./MW	Rs./MW	Rs./MW	Rs./MW	Rs./kWh	Rs./kWh	Rs./kWh	Rs./MW	Rs./kWh
1	42,871,422	832,371	536,514	42,039,051	1,368,886	2.2130	1.3588	3.5718	269,727	0.1759
	42,039,051	842,788	526,098	41,196,262	1,368,886					
	41,196,262	853,335	515,551	40,342,927	1,368,886					
	40,342,927	864,014	504,872	39,478,913	1,368,886					
	42,871,422	3,392,509	2,083,034	39,478,913	5,475,544					
	39,478,913	874,827	494,059	38,604,086	1,368,886					
	38,604,086	885,775	483,111	37,718,311	1,368,886					
2	37,718,311	896,860	472,026	36,821,451	1,368,886	2.3259	1.2459	3.5718	248,333	0.1620
	36,821,451	908,084	460,802	35,913,367	1,368,886					
	39,478,913	3,565,546	1,909,998	35,913,367	5,475,544					
	35,913,367	919,448	449,438	34,993,919	1,368,886					
	34,993,919	930,955	437,931	34,062,964	1,368,886					
	34,062,964	942,605	426,281	33,120,359	1,368,886					
	33,120,359	954,401	414,485	32,165,958	1,368,886					
3	35,913,367	3,747,409	1,728,135	32,165,958	5,475,544	2.4445	1.1273	3.5718	225,849	0.1473
	32,165,958	966,345	402,541	31,199,613	1,368,886					
	31,199,613	978,438	390,448	30,221,175	1,368,886					
	30,221,175	990,683	378,203	29,230,492	1,368,886					
	29,230,492	1,003,081	365,805	28,227,411	1,368,886					
	32,165,958	3,938,547	1,536,996	28,227,411	5,475,544					
	28,227,411	1,015,634	353,252	27,211,777	1,368,886					
4	27,211,777	1,028,344	340,542	26,183,433	1,368,886	2.5692	1.0026	3.5718	202,218	0.1319
	26,183,433	1,041,213	327,673	25,142,219	1,368,886					
	25,142,219	1,054,244	314,642	24,087,976	1,368,886					
	28,227,411	4,139,435	1,336,109	24,087,976	5,475,544					
	24,087,976	1,067,437	301,449	23,020,539	1,368,886					
	23,020,539	1,080,795	288,091	21,939,743	1,368,886					
	21,939,743	1,094,321	274,565	20,845,422	1,368,886					
5	20,845,422	1,108,016	260,870	19,737,407	1,368,886	2.7002	0.8716	3.5718	177,381	0.1157
	24,087,976	4,350,569	1,124,974	19,737,407	5,475,544					
	19,737,407	1,121,882	247,004	18,615,525	1,368,886					
	18,615,525	1,135,922	232,964	17,479,603	1,368,886					
	17,479,603	1,150,137	218,748	16,329,465	1,368,886					
	16,329,465	1,164,531	204,355	15,164,934	1,368,886					
	19,737,407	4,572,472	903,071	15,164,934	5,475,544					
6	15,164,934	1,179,104	189,782	13,985,830	1,368,886	2.9827	0.5891	3.5718	123,843	0.0808
	13,985,830	1,193,860	175,026	12,791,970	1,368,886					
	12,791,970	1,208,801	160,085	11,583,169	1,368,886					
	11,583,169	1,223,928	144,958	10,359,241	1,368,886					
	15,164,934	4,805,694	669,850	10,359,241	5,475,544					
	10,359,241	1,239,245	129,641	9,119,996	1,368,886					
	9,119,996	1,254,754	114,132	7,865,242	1,368,886					
7	7,865,242	1,270,456	98,430	6,594,785	1,368,886	3.1348	0.4370	3.5718	95,009	0.0620
	6,594,785	1,286,355	82,530	5,308,430	1,368,886					
	10,359,241	5,050,811	424,733	5,308,430	5,475,544					
	5,308,430	1,302,454	66,432	4,005,976	1,368,886					
	4,005,976	1,318,753	50,133	2,687,223	1,368,886					
	2,687,223	1,335,257	33,629	1,351,967	1,368,886					
	1,351,967	1,351,967	16,919	(0)	1,368,886					
8	5,308,430	5,308,430	167,114	(0)	5,475,544	3.4628	0.1090	3.5718	32,853	0.0214



## Crest Energy Pakistan Limited

### Debt Servicing Schedule

Interest Rate 2.65%

Period	Foreign Debt (US\$ converted from RMB Loan @ 2.65%)					Annual Principal Repayment	Annual Interest	Annual Debt Servicing	Sinosure Fee	
	Principal	Repayment	Mark-up	Balance	Debt Service					
	Rs./MW	Rs./MW	Rs./MW	Rs./MW	Rs./MW	Rs./kWh	Rs./kWh	Rs./kWh	Rs./MW	Rs./kWh
1	15,963,378	349,851	105,757	15,613,526	455,609	0.9220	0.2668	1.1888	98,235	0.06408
	15,613,526	352,169	103,440	15,261,357	455,609					
	15,261,357	354,502	101,106	14,906,855	455,609					
	14,906,855	356,851	98,758	14,550,004	455,609					
	15,963,378	1,413,373	409,061	14,550,004	1,822,435					
	14,550,004	359,215	96,394	14,190,789	455,609					
2	14,190,789	361,595	94,014	13,829,195	455,609	0.9466	0.2422	1.1888	89,527	0.05840
	13,829,195	363,990	91,618	13,465,204	455,609					
	13,465,204	366,402	89,207	13,098,803	455,609					
	14,550,004	1,451,202	371,233	13,098,803	1,822,435					
	13,098,803	368,829	86,780	12,729,973	455,609					
	12,729,973	371,273	84,336	12,358,701	455,609					
3	12,358,701	373,732	81,876	11,984,969	455,609	0.9720	0.2168	1.1888	80,587	0.05257
	11,984,969	376,208	79,400	11,608,760	455,609					
	13,098,803	1,490,042	332,392	11,608,760	1,822,435					
	11,608,760	378,701	76,908	11,230,060	455,609					
	11,230,060	381,210	74,399	10,848,850	455,609					
	10,848,850	383,735	71,874	10,465,115	455,609					
4	10,465,115	386,277	69,331	10,078,838	455,609	0.9980	0.1908	1.1888	71,408	0.04658
	11,608,760	1,529,923	292,512	10,078,838	1,822,435					
	10,078,838	388,836	66,772	9,690,001	455,609					
	9,690,001	391,412	64,196	9,298,589	455,609					
	9,298,589	394,006	61,603	8,904,583	455,609					
	8,904,583	396,616	58,993	8,507,967	455,609					
5	10,078,838	1,570,870	251,565	8,507,967	1,822,435	1.0247	0.1641	1.1888	61,982	0.04043
	8,507,967	399,243	56,365	8,108,724	455,609					
	8,108,724	401,888	53,720	7,706,835	455,609					
	7,706,835	404,551	51,058	7,302,284	455,609					
	7,302,284	407,231	48,378	6,895,053	455,609					
	8,507,967	1,612,914	209,521	6,895,053	1,822,435					
6	6,895,053	409,929	45,680	6,485,124	455,609	1.0521	0.1367	1.1888	52,305	0.03412
	6,485,124	412,645	42,964	6,072,480	455,609					
	6,072,480	415,379	40,230	5,657,101	455,609					
	5,657,101	418,130	37,478	5,238,971	455,609					
	6,895,053	1,656,083	166,352	5,238,971	1,822,435					
	5,238,971	420,901	34,708	4,818,070	455,609					
7	4,818,070	423,689	31,920	4,394,381	455,609	1.0803	0.1085	1.1888	42,368	0.02764
	4,394,381	426,496	29,113	3,967,885	455,609					
	3,967,885	429,321	26,287	3,538,564	455,609					
	5,238,971	1,700,407	122,028	3,538,564	1,822,435					
	3,538,564	432,166	23,443	3,106,398	455,609					
	3,106,398	435,029	20,580	2,671,369	455,609					
8	2,671,369	437,911	17,698	2,233,458	455,609	1.1092	0.0796	1.1888	32,166	0.02098
	2,233,458	440,812	14,797	1,792,646	455,609					
	3,538,564	1,745,918	76,517	1,792,646	1,822,435					
	1,792,646	443,732	11,876	1,348,914	455,609					
	1,348,914	446,672	8,937	902,242	455,609					
	902,242	449,631	5,977	452,610	455,609					
9	452,610	452,610	2,999	(0)	455,609	1.1389	0.0499	1.1888	21,690	0.01415
	1,792,646	1,792,646	29,789	(0)	1,822,435					
10	1,792,646	1,792,646	29,789	(0)	1,822,435	1.1694	0.0194	1.1888	10,935	0.00713

