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No. NEPRA/R/ADG(Trf)/TRF-342/CPHGCL-2015/11541-11543

June 30, 2022

Subject: Decision of the Authority in the matter of Commercial Operations Date (COD) of 1,320 MW China Power Hub Generation Company Private Limited (CPHGCL) (Case No. NEPRA/TRF-342/CPHGCL-2015)

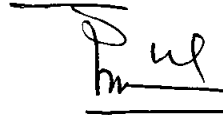
Dear Sir,

Please find enclosed herewith the subject decision of the Authority along with Annex-I & II (33 Pages) in Case No. NEPRA/TRF-342/CPHGCL-2015.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official Gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 within 30 days from the intimation of this Decision. In the event the Federal Government fails to notify the subject tariff Decision or refer the matter to the Authority for reconsideration, within the time period specified in Section 31(7), then the Authority shall notify the same in the official Gazette pursuant to Section 31(7) of NEPRA Act.

3. Order of the Authority along with Tariff Table (Annexure-I) & Debt Servicing Schedule (Annex-II) will be notified in the official Gazette.

Enclosure: As above


300622
(Syed Safeer Hussain)

Secretary,
Ministry of Energy (Power Division),
Government of Pakistan
'A' Block, Pak Secretariat
Islamabad.

CC:

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

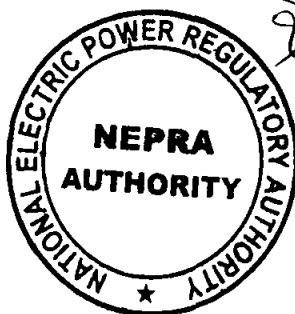
DECISION OF THE AUTHORITY IN THE MATTER OF COMMERCIAL OPERATIONS DATE (COD) OF 1,320 MW CHINA POWER HUB GENERATION COMPANY (PVT) LTD (CPHGCL) NO.NEPRA/TRF 342/CPHGCL-2015

1. Introduction:

- 1.1 China Power Hub Generation Company (Private) Limited (hereinafter referred to as "CPHGCL") is a generation licensee pursuant to Section 15 of the NEPRA Act (XL of 1997) bearing generation license No. IGSP/68/2016 dated September 08, 2016. The power plant having 2 * 660 MW Coal based Generation Facility is located at Hub, Baluchistan.
- 1.2 The Authority vide decision dated June 26, 2014 determined the Upfront Tariffs for Imported/Local Coal based power projects depending on the capacity and type of financing. The Authority through its decision dated November 21, 2014 also disposed of the review petition filed by Mr. Asad Umar. These two decisions hereinafter shall be called "Upfront Coal Tariff".
- 1.3 CPHGCL submitted an application on September 15, 2015 for unconditional acceptance of Upfront Coal Tariff for category of 2 * 660MW Imported coal based on foreign financing. Subsequently the tariff was approved by National Electric Power Regulatory Authority (hereinafter referred as "the Authority") vide its determination dated February 12, 2016 (hereinafter referred as "the reference tariff") at Rs. 8.1176/kWh, US Cents 8.3601/kWh. Review decision in the matter was issued on November 07, 2016. Subsequently for dedicated Jetty and Coal Transshipment Services, a separate decision was issued in July 28, 2017. In addition, for Jetty O&M the decision was issued August 07, 2019.
- 1.4 Pursuant to the relevant COD adjustments given in the reference tariff, CPHGCL after commencing commercial operations with effect from August 17, 2019 notified by Central Power Purchasing Agency - Guarantee (CPPA-G)'s letter dated December 27, 2019, submitted its request for adjustment of relevant components of its tariff at commercial operations date (hereinafter referred to as "COD request") on March 09, 2020 along with documents.
- 1.5 COD adjustments in the relevant tariff components are processed on the basis of adjustments provided in reference tariff determination, the documentary evidence provided by the CPHGCL and past practices adopted by the Authority while determining COD tariff adjustments applications. The information submitted by CPHGCL along with its request for adjustment of tariff at COD was found to be incomplete.
- 1.6 CPHGCL was time and again directed to submit the required information pertaining to the European Boiler, Custom duties and taxes, capital structure, Jetty IDC & financing cost, ash and limestone cost etc. First information in the matter was received in November 2020 and last information in the matter was received regarding ash handling cost in January 2022.

2. Project Cost Allowed in Upfront Tariff

- 2.1 The summary of reference project cost allowed to CPHGCL as per reference tariff is as under:



Description	660 MW	1,320 MW
Cost Components	Million US\$	Million US\$
Capital Cost	767.9	1,535.7
Custom Duties & Cess	30.5	60.9
Sub-Total	798.4	1,596.7
Financing Fees & Charges	21.0	41.9
Sinosure Fee	63.9	127.8
Interest during Construction	72.8	144.5
Sub-Total	157.7	314.3
Total	956.1	1,911.1

2.2 Summary of the tariff as per the reference tariff is as follows:

Reference Tariff Table		
Tariff Components	Years	
Capacity Charges (PKR/kW/Hour)	1-10	11-30
Fixed O&M – Local	0.1435	0.1435
Fixed O&M – Foreign	0.1435	0.1435
Working Capital	0.2276	0.2276
Insurance	0.1021	0.1021
Return on Equity	1.1872	1.1872
Debt Servicing	1.6692	0.0000
Total Capacity Charges	3.4731	1.8040
Energy Charges Rs./kWh		
Fuel Cost Component	4.2913	4.2913
Ash Disposal	0.2200	0.2200
Lime Stone	0.0900	0.0900
Variable O&M – foreign	0.0684	0.0684
Variable O&M – Local	0.0456	0.0456
Total Energy Charges	4.7153	4.7153

3. Adjustments in Project Cost at Commercial Operation Date (COD):

3.1 The reference tariff was required to be adjusted at COD included but not limited to on the following grounds

- i. Net Capacity
- ii. Efficiency
- iii. Capital Cost.
 - a. Power Plant
 - i) Boiler Cost Adjustment - European or Chinese Make
 - ii) Indexation of Capital Cost
 - b. Jetty
 - i) EPC Cost
 - ii) Non-EPC Cost
 - iii) IDC



- iv) Financing Fees & Charges
- iv. Custom Duties, Cess and Withholding Tax (Plant & Jetty)
- v. Sinosure Fee
- vi. Interest During Construction (Plant)
- vii. Financing Fees and Charges
- viii. US\$ to PKR Adjustment in Total Project Cost
- ix. O&M Cost
 - a. Power Plant
 - b. Jetty

4. Head wise discussion on the adjustments and openers allowed in the project cost

Below is the head wise detail on the admissible claim of one-time adjustments;

5. Net Capacity

5.1 The Upfront Tariff Determination assumes a net capacity of 1,213.187 MW (606.593 x 2) for the Project. CPHGCL submitted that the actual net capacity of the Project in the Initial Dependable Capacity Certificate at COD was determined as 1,249.10 MW, which has been duly certified by the Independent Engineer. Consequently, the capacity components of the reference tariff have been adjusted downwards accordingly to arrive at the Adjusted Tariff.

5.2 The actual net capacity of the complex will be determined on the basis of Initial Dependable Capacity (IDC) Test at the time of COD and the relevant tariff components will be adjusted downward. However, upward adjustment in tariff will not be allowed if the IDC established lower to the benchmarks, as per the Order para 3 (II)(ii)(2) of the reference tariff.

5.3 The net capacity at COD has been established as 1,249.1 MW as per the IDC test conducted as COD duly certified by Independent Engineer and the same has been notified by the CPPA-G. Keeping in view the net capacity, the downward adjustment in capacity charge has been made accordingly.

6. Efficiency

6.1 CPHGCL requested the Authority to allow fuel cost component on revised net efficiency of 39.14% in line with the sharing mechanism of the Authority.

6.2 In the Upfront tariff the fuel cost component was worked out on the basis of 39% efficiency. The Company in support of its claim of higher efficiency submitted the efficiency report. The Authority in the reference tariff of CPHGCL at Order para 3(II)(xiii)(2) has allowed the following sharing mechanism:

Efficiency net (LHV) achieved At COD	Sharing Ratio Power Purchaser : Sponsor
39% (min)	100% : 0%
39.01% - 39.50%	70% : 30%



39.51% - 40.00%	50% : 50%
40.01% - 40.50%	30% : 70%
>40.5%	0% : 100%

6.3 It has been observed that the efficiency of CPHGCL has been established as 39.2%. As per sharing mechanism of 70:30 between the Power Purchase and the Sponsor, the efficiency according to the sharing mechanism has been adjusted as 39.14%. Accordingly the fuel cost component in the instant case has been revised.

6.4 The Authority noted that as per Clause 3 (*Order*) Part II paragraph xviii of the reference tariff of CPHGCL, the Power Purchaser was required to provide approval for acceptance of test conducted by CPHGCL regarding heat rate test, confirming the thermal efficiency of 39.14% established by the complex at COD. Therefore the Authority directs CPPA-G to provide the approval of acceptance of the heat rate test conducted at COD by CPHGCL establishing thermal efficiency of 39.14%.

7. Capital Cost (Plant) - Boiler Cost Adjustment –European Make

7.1 In the reference tariff determination, CPHGCL was allowed an incremental cost of European boiler @ US\$ 0.1 million per MW which was assumed in the overall project cost on account of capital cost, financing fees & IDC, as specified in Clause 3 (*Order*), Part II paragraph vii(c), para 28 of Upfront decision dated June 26, 2014 and Para 140 of the Upfront decision dated November 21, 2014 of the Upfront Coal Tariff. The relevant paras are reproduced hereunder:

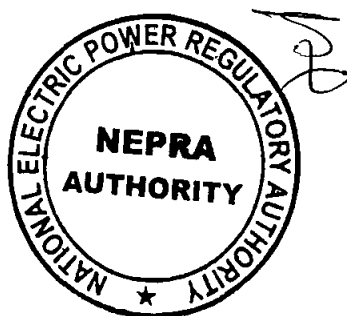
vii (c) ".....The sponsor will submit verifiable documentary evidence at the time of COD regarding installation of European boiler for entitlement of this cost. The projects which do not install European boiler will not be eligible for this cost."

"28. In order to claim the cost of Sinosure, customs duties and additional cost of European boiler, the verifiable documentary evidence shall have to be provided to the satisfaction of the Authority. The investor, however, shall not be allowed the costs, above the allowed limits as accounted for in the upfront tariff."

140 ".....Any boiler will be categorized as European boiler regardless of its place of manufacture if it is designed and supplied by European boiler manufacturer and installed under its warranty"

7.2 CPHGCL submitted that it had installed a European boiler which meets the criteria stated in the reference tariff. According to CPHGCL, the boiler has been designed and manufactured by a European manufacturer, Alstom Boiler France and the boiler is installed under a warranty by Alstom; and that the boiler also carries the nameplate of Alstom.

7.3 CPHGCL also submitted a letter dated December 07, 2020 by Mr. Perttu Henttonen, Managing Officer, General Electric Technology (GETEC) confirming regarding design, warranty and nameplate of CPHGCL boilers. CPHGCL has thus requested NEPRA that having complied with the requirements of the Upfront Coal Tariff for installation of a



European boiler, CPHGCL may be allowed incremental cost of European boiler @ US\$ 0.1 million per MW or US\$ 132 million.

- 7.4 CPHGCL was directed on October 22, 2020 to provide the financial trail of procurement of European boiler, the cost of which had to be actualized through documentary evidence. In reply CPHGCL submitted Boiler Supply Agreement between China Energy Engineering Group Tianjin Electric Construction Company (EPC Contractor of CPHGCL) and Wuhan Boiler Company (Boiler Manufacturer) dated September 23, 2016. Discussion meeting in the matter was also held in NEPRA office on July 07, 2021 wherein GE representatives have confirmed that the boilers are European Boilers also supported by a letter from GE Pakistan.
- 7.5 CPHGCL was requested vide communication dated October 21, 2021 to provide the financial trail in support of incremental cost incurred on account of European Boiler since financial trail was not established through the documents provided by the Company. In response, CPHGCL submitted that the Company had signed a lump sum EPC contract including European Boiler. Further CPHGCL in its response dated November 01, 2021 stated that only three requirements were mentioned in the Upfront Tariff i.e. design by European Boiler manufacturer, installation under the European Boiler manufacturer warranty and the manufacturer's name plate and the same were submitted as part of the COD request. CPHGCL submitted that as per reference tariff there is no requirement for substantiation of incremental cost of European Boiler.
- 7.6 With reference to CPHGCL's stance that the documentary evidence regarding the financial trail of European Boiler is not required for the purposes of true-up of tariffs determined on upfront basis, the Authority noted that as per para 28 of the Upfront Coal Tariff which states that:
"In order to claim the cost of Sinosure, customs duties and additional cost of European boiler, the verifiable documentary evidence shall have to be provided to the satisfaction of the Authority."
- 7.7 In view of above and as per the decision taken by the Authority in the precedent case of Port Qasim Electric Power Company Pvt. Ltd. (PQEPCL) and Engro Powergen Thar Limited (EPTPL), the Authority considers that based on the evidence provided, the boiler installed by CPHGCL broadly fulfills the definition of European boiler defined in the Upfront Coal Tariff, however, the Authority could not clearly establish the incremental cost on account of European boiler including the financial trails of payment for the same. Therefore, the Authority decided to allow the US\$ 0.1 million/MW provisionally for three months from date of this decision. In this time period, CPHGCL shall provide legal arrangements and financial trail to the Authority failing which the same shall be adjusted accordingly from the true up COD cost of the CPHGCL, as the burden of proof regarding entitlement of incremental cost of European Boiler lies with CPHGCL.
- 7.8 Accordingly, CPHGCL shall provide the basis of incremental cost of US\$ 132 million. This information should be backed by evidence justifying the final agreed price for incremental European Boiler cost followed by payment evidence of the same.



8. **Capital Cost Indexation:**

- 8.1 As per reference tariff, 89% of capital cost has to be indexed as per prescribed mechanism, with the changes in Producers Price Index (PPI) for Steel and Electrical Machinery, wherein Clause 3 (*Order*), Part II under the head of Capital Cost Indexation states:

$CC_{(n)}$	=	$(CC_{(0)} * 51\% * \Delta SI) + (CC_{(0)} * 38\% * \Delta EI) + (CC_{(0)} * 11\%)$
Where:		
$CC_{(n)}$	=	Capital Cost at the time of opting the tariff during the validity period
$CC_{(0)}$	=	Capital Cost at the beginning of the validity period
ΔSI	=	Variation in US PPI for Steel i.e. $SI_{(n)}/SI_{(0)}$
$SI_{(n)}$	=	PPI Steel at the time of opting the tariff
$SI_{(0)}$	=	PPI Steel for the month of June 2014
ΔEI	=	Variation in US PPI for Electrical Machinery i.e. $EI_{(n)}/EI_{(0)}$
$EI_{(n)}$	=	PPI Electrical Machinery at the time of opting the tariff
$EI_{(0)}$	=	PPI Electrical Machinery for the month of June 2014

- 8.2 CPHGCL claimed indexed capital cost of US\$ 1,536.24 Million (Rs. 180,431.39) at COD as against the reference capital cost of US\$ 1,535.74 million (Rs. 149,119.37 million) in the original tariff determination.
- 8.3 CPHGCL submitted that reference tariff determination does not specify codes of the US PPI for steel and Electrical Machinery to be considered for capital cost indexation mechanism. Based on the expert opinion, and considering the details of "New Coal Fired Power Plant Performance and Cost Estimates (S1-009808)" relied upon by the Authority in the Upfront Tariff, 2014, CPHGCL considers that the appropriate US PPI's to be considered for capital cost indexation are as follows;
- Steel power boilers (stationary and marine), parts and attachments (exc. For nuclear app)-Code:32410-5
 - Machinery and equipment – Electrical machinery and equipment, not seasonally adjusted – Code: WPU117
- 8.4 CPHGCL had opted for the Upfront Tariff on February 12, 2016. The Authority further observed that CPHGCL submitted the review motion against the reference upfront tariff wherein the Company did not agitate regarding the use of Steel Power Boiler values instead of Iron & Steel values in the respective Upfront Tariff. CPHGCL in its review motion submitted that CAPEX is sensitive to the date of acceptance of Upfront Tariff and in the instant case the impact on CAPEX is around US\$ 50 million. This amount was calculated by CPHGCL on the basis of changes in PPI Iron & Steel and not Steel Power Boiler. In support of its claim CPHGCL representatives vide dated November 30, 2016 also submitted the link of PPI Iron & Steel and PPI Electrical Machinery for indexation of capital cost. Accordingly the Authority used the same index as requested/used by CPHGCL. Thus the request of CPHGCL does not merit consideration.

8.5 Further, it is important to highlight that Iron & Steel index has been consistently used for different analysis of upfront coal (Imported/Thar) CAPEX both internally and as well during the CPHGCL upfront coal determination. The index value of US PPI Steel mentioned in UFT Thar Coal, 2017 was 217.70 as on March 2017, whereas the index value of Steel Boiler as on March 2017 was 107.70. This shows that in the reference Upfront Tariff for coal power projects, Iron and Steel index was used instead of Steel Power Boiler as claimed by the Company. Keeping in view the aforesaid facts, the Authority in case of HSR, Port Qasim and EPTPL indexed the Capital Cost with the Iron & Steel Index.

8.6 In view thereof, the revised indexed capital cost in light of the indexation mechanism provided in the reference tariff results as follows:

$$CC(n) = (CC(0) * 51\% * \Delta SI) + (CC(0) * 38\% * \Delta EI) + (CC(0) * 11\%)$$

Ref. Capital Cost	=	US\$ 1,535.74 million
Indexed Capital Cost	=	1,535.74 * 51% * 172.7/232.6) +
		1,535.74 * 38% * (113.2/113.6) +
		1,535.74 * 11%
	=	US\$ 1,331.98 million.

8.7 Consistent to earlier decisions, the Authority has decided that revised Indices of February 2016 (month of allowing tariff to CPHGCL) from the US Bureau of Labor Statistics has been applied for indexation. Accordingly the indexed capital cost including European Boiler works out as US\$ 1,332.23 million and the same has been allowed to CPHGCL.

9. Capital Cost (Jetty) - EPC Cost

9.1 CPHGCL vide its request dated June 29, 2016 submitted an application for adjustment of coal upfront tariff for optimal Jetty design including, as an integral part, a dedicated Coal Transshipment Services (CTS) for its 2 * 660 MW imported coal fired power project. Against the request of CPHGCL the Authority issued the decision dated July 28, 2017 (hereinafter referred as "Jetty Decision") in which the Authority approved the EPC cost of US\$ 185.82 million, withholding tax of US\$ 6.65 million and non-EPC cost of US\$ 9.29 million for construction of Jetty subject to adjustment at COD. CPHGCL submitted that the plant and Jetty achieved COD on August 17, 2019. CPHGCL submitted the request for adjustment of relevant cost components of Jetty in line with the NEPRA decision dated July 28, 2017.

9.2 While examining the documents it was revealed that the Jetty cost was allowed on cost plus basis, accordingly CPHGCL was asked to provide the documentary evidence in support of its claim. In this regard, para 49 of the determination of Upfront Tariff for Coal Power Project categorically stated that *"the Jetty cost including its O&M cost per ton will be subject to adjustment on the basis of verifiable documentary, evidence."*

9.3 Against the reference Jetty Capital Cost of US\$ 185.82 million, CPHGCL claimed the same amount as allowed in the Jetty Decision. However the documents submitted by CPHGCL

revealed that US\$ 172.262 million has been paid to the EPC Contractor and the Authority decided to allow Jetty EPC cost of US\$ 172.262 million to CPHGCL.

10. Non-EPC Cost:

- 10.1 Reference Non-EPC cost of US\$ 9.29 million was allowed to CPHGCL for construction of Jetty as per Authority's decision dated July 28, 2017 which states as follows:

"In view of the above, the Authority considers that 5% of the EPC cost shall be a reasonable estimate for the incremental non-EPC cost. Accordingly, USD 9.29 million is being approved on account of non-EPC cost."

- 10.2 The documents submitted by CPHGCL revealed that the Company has paid US\$ 9.947 million as non-EPC cost. However, the Company has claimed US\$ 9.29 million as allowed in the Jetty Decision. The Authority in its decision allowed US\$ 9.29 million as 5% of the EPC cost of US\$ 185.82 million.
- 10.3 In the instant case the EPC cost has been allowed as US\$ 172.264 million. Accordingly in line with the Authority's Jetty decision, 5% of the EPC cost is worked out as US\$ 8.61 million (Rs. 1,114.43 million) and the same is allowed to CPHGCL.

11. Interest during Construction and Financing Fee for Jetty

- 11.1 The Jetty decision dated July 28, 2017 approved by the Authority provided the following mechanism for adjustment of IDC, financing fee and sinosure;

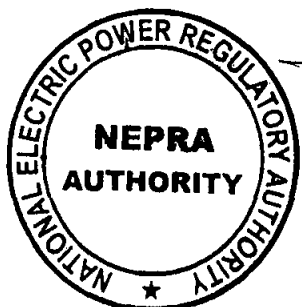
"Custom duties & cess, sinosure fee, interest during construction, financing fees and charges will be increased to take into consideration the additional costs of Jetty."

- 11.2 CPHGCL was directed on October 20, 2021 to provide documentary evidences against IDC, financing fee and sinosure fee paid for Jetty CAPEX. In response CPHGCL on November 01, 2021 stated that Jetty and its related cost are part of Upfront Tariff and would naturally be considered to be an upfront cost (i.e. not on cost-plus basis).
- 11.3 The CPHGCL was time and again requested to provide supportive documents for verification purpose. However, no information was provided. The Authority considered IDC, Financing Fees & Charges and Sinore is a legitimate cost of CPHGCL, however since no documentary evidence has been provided against the IDC, financing fee and charges and Sinore, therefore the Authority decided to disallow these cost until the provision of verifiable documentary evidence by CPHGCL.

12. Adjustment of Exchange Rate:

- 12.1 CPHGCL requested to allow exchange rate variation as per Order para 3(VIII)(2) of the reference tariff which stated as follows:

"At the time of COD, Project Cost will be converted into Pak Rupees using the Average of the Exchange Rates prevailing on the 1st day of each month during the construction period"



- 12.2 As per the submission of CPHGCL, the average of prevailing exchange rates on 1st day of each month during construction period between September 2016 and August 2019, has been calculated as Rs. 119.09 per US\$.
- 12.3 It was noted that CPHGCL has incorrectly taken a month later than that of the actual timelines of construction period. The Notice to Proceed (NTP) of CPHGCL was on November 01, 2016 and RCOD is on August 01, 2019, thus the number of months to be used for the basis of computation of average exchange rate shall be 33 months (as agreed in the PPA by CPHGCL and power purchaser) which would be from November 2016 to July 2019. Accordingly the average Rs. to US\$ exchange rates works out as Rs. 118.75 per US\$ and the same has been allowed by the Authority to CPHGCL.

13. Custom Duties, Cess, Withholding Tax (WHT) & Sales Tax

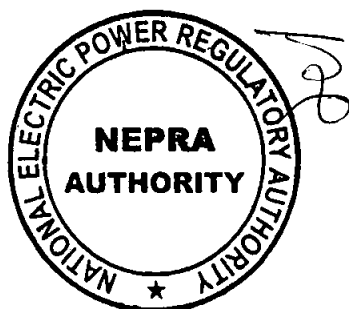
- 13.1 As per the reference tariff, custom duties and taxes of US\$ 61.00 million (Rs. 5,922 million) were assumed, which were to be adjusted at COD stage on actual as per Order para 3 (II) (viii) of the reference tariff, as prescribed below:

"Customs duties & cess @ 5.95% of the 66.75% of the capital cost has been assumed in the project cost which will be adjusted at the time of COD on actual basis. No withholding tax on local foreign contractors, sub-contractors, supervisory services and technical services provided by foreign (non-residents) entities has been assumed. Actual expenditure, if any, on this account will be included in the project cost at the time of COD on the basis of verifiable documentary evidence."

- 13.2 CPHGCL in its COD adjustment request has claimed an amount of of US\$ 101.103 million (Rs. 12,899.853 million) on account of duties and taxes, WHT and Sales Tax pertaining to Power Plant and Jetty and provided the following break-up;

Description	PKR in Million			US\$ in Million		
	Plant	Jetty	Total	Plant	Jetty	Total
Custom Duties	3,519.20	494.48	4,013.6	31.27	3.91	35.19
Additional Custom Duties	18.60	42.84	61.45	0.15	0.28	0.44
Regulatory Custom Duties	150.62	52.57	203.19	1.29	0.43	1.72
Sindh Infrastructure Cess	1,077.67	80.74	1,158.41	9.60	0.63	10.24
Stamp Duty on Cess	0.50	0.09	0.59	0.00	0.00	0.00
Total Custom Duty and Cess	4,766.59	670.72	5,437.24	42.31	5.25	47.59
Withholding Tax	5,859.34	1,078.46	6,937.80	41.03	8.31	49.34
Duties and Taxes Land	22.72	-	22.72	0.21	-	0.21
Stamp Duties on Issuance of Shares	280.61	-	280.61	2.13	-	2.13
Non-Adjustable Sales Tax	221.35	-	221.35	1.79	-	1.79
Grand Total	11,150.63	1,749.21	12,899.85	87.515	13.58	101.10

14. The details on the above head of taxes and duties are as under:



14.1 Custom Duty

14.1.1 CPHGCL in its COD adjustment has claimed Rs. 5,740.57 million as custom duties and cess on import of power plant and Jetty related equipment, Duties and Taxes Land and Stamp Duties on Issuance of Shares. The breakup is given below;

Description	PKR in Million			US\$ in Million		
	Plant	Jetty	Total	Plant	Jetty	Total
Custom Duties	3,519.20	494.48	4,013.6	31.27	3.91	35.19
Additional Custom Duties	18.60	42.84	61.45	0.15	0.28	0.44
Regulatory Custom Duties	150.62	52.57	203.19	1.29	0.43	1.72
Sindh Infrastructure Cess	1,077.67	80.74	1,158.41	9.60	0.63	10.24
Stamp Duty on Cess	0.50	0.09	0.59	0.00	0.00	0.00
Duties and Taxes Land	22.72	-	22.72	0.21	-	0.21
Stamp Duties on Issuance of Shares	280.61	-	280.61	2.13	-	2.13
Grand Total	5,069.92	670.72	5,740.57	44.65	11,525.86	49.93

14.1.2 It was noted that Custom Duty on account Regulatory Custom Duty, Anti-Dumping Custom Duty, De-blocking & penalty has not been considered by the Authority in other cases of upfront imported coal tariffs such as Huaneng Shandong Ruyi (Pakistan) Energy (Private) Limited (HSRPEL) and PQEPCPL. The reasons for disallowance was that these items were locally available therefore there was no need to import it. Thus CPHGCL like HSRPEL and PQEPCPL should have avoided these duties.

14.1.3 The Authority decided to allow US\$ 45.880 million on account of Custom Duty, Cess and Stamp Duty on Cess and decided to disallow the amount of US\$ 4.08 million due to the fact narrated above. Further the duties paid on land and stamp duty paid on equity shares are not considered due to the fact that these Land was covered in the Capital Cost in the reference tariff and stamp duty on issuance of shares was not specifically allowed under the tax adjustment clause defined in the Upfront Tariff.

14.2 Withholding Tax (WHT):

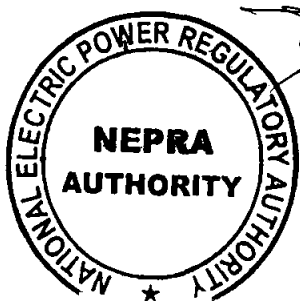
14.2.1 No withholding tax (WHT) was assumed in the Project Cost in the reference tariff, which was subject to adjustment on actual at COD. The adjustment mechanism for withholding tax given in tariff determination for power plant states that;

"No withholding tax on local foreign contractors, sub-contractors, supervisory services and technical services provided by foreign (non-residents) entities has been assumed. Actual expenditure, if any, on this account will be included in the project cost at the time of COD on the basis of verifiable documentary evidence."

14.2.2 The adjustment mechanism given in tariff determination dated July 28, 2017 for Jetty withholding tax states that;

"Withholding taxes, if any actually paid shall be treated as pass through subject to provision of verifiable documentary evidence with a maximum cap of US\$ 6.65 million"

14.2.3 CPHGCL requested to allow Rs. 6,937.80 million on account of withholding tax. CPHGCL submitted that the amount has been paid to Federal Board of Revenue ("FBR") with reference to withholding tax on payments to different contractors and entities as per



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provisions of Income Tax Ordinance, 2001. The breakup of claimed withholding tax is as under;

Description	Range of Income Tax Rates	Tax in PKR	Tax in USD
Plant (Supplies & Services)	6% - 12.5%	5,859.34	41.03
Jetty (Supplies & Services)	6% - 12.5%	1,078.46	8.313
Grand Total		6,937.80	49.34

14.2.4 Further as per the Jetty Decision of July 28, 2017, withholding tax of US\$ 6.65 million was allowed. CPHGCL claimed WHT of US\$ 49.346 million (which was based on WHT of US\$ 41.033 million paid on Plant and US\$ 8.313 million on Jetty). In support of its claim, CPHGCL submitted computerized tax payment receipts (CPR), relevant clauses of the contract and cheques / bank statements.

14.2.5 Since CPHGCL claim of US\$ 8.313 million on account of Jetty was beyond the allowed limit, therefore the amount of US\$ 6.65 million has been considered to be allowed. Further it was noted within the claimed WHT pertaining to the Plant which is US\$ 41.033, an amount of US\$ 8.350 million was pertaining to WHT paid on the services of advertisement, insurance, financial and legal advisor, all of these were not specifically mentioned in the Tax Adjustment clause of upfront tariff, therefore the same has not been considered. The revised WHT amount resulted as US\$ 32.682 million. Collectively the WHT on plant and Jetty resulted in US\$ 39.33 million and the same has been allowed to CPHGCL.

14.3 Sales Tax:

14.3.1 The reference tariff awarded to CPHGCL did not mention any proviso regarding adjustment of Sales Tax.

14.3.2 CPHGL claimed non-adjustable sales tax amounting to Rs. 221.36 million (US\$ 1.80 million) paid on account of provisions of Sindh Sales Tax on Services Act, 2011 and Federal Sales Tax Act, 1990 which are reduced rate services, unregistered suppliers/service providers, unregistered service providers, inactive suppliers and purchase of motor vehicle. In support of its claim, the CPHGCL has submitted copies of Sale tax challans, Tax payment receipts, Invoices and Bank Statements.

14.3.3 CPHGCL also provided the tax opinion of M/s KPMG which summarized that the tax amounting to Rs. 221.35 million have been paid to reduced rates services, unregistered supplier/services, inactive suppliers and purchase of motor vehicles instead of registered/active supplier/service providers which create the liability for end-consumer instead of adjusting the same under input output method.

14.3.4 It was noted that it is not clear at this stage whether the sales tax claimed is adjustable or un-adjustable against the output tax, therefore the Authority decided to disallow US\$ 1.80 million on account of Sales Tax, on the fact that CPHGCL can adjust the same against their output tax, and if any circumstance it is not adjustable, CPHGCL can claim this Sales

Tax as Pass-through item by CPPA-G under the PPA. However, CPPA-G has to ensure that CPHGCL has exercised all legal remedies available for adjusting the sales tax from the relevant agencies before submitting the claim to the Power Purchaser.

14.4 Summary of the Duties and Taxes

14.4.1 In view of the above, the Authority has decided to allow the following cost on account of custom duties and taxes:

Description	PKR in Million			US\$ in Million		
	Plant	Jetty	Total	Plant	Jetty	Total
Custom Duties	3,519.20	494.48	4,013.6	31.27	3.91	35.19
Additional Custom Duties	18.60	42.84	61.45	0.15	0.28	0.44
Sindh Infrastructure Cess	1,077.67	80.74	1,158.41	9.60	0.63	10.24
Stamp Duty on Cess	0.50	0.09	0.59	0.00	0.00	0.00
Total Custom Duty and Cess	4,615.97	618.15	5,234.05	41.02	4.82	45.87
Withholding Tax	4,666.72	862.63	5,529.36	32.68	6.65	39.33
Grand Total	9,282.70	1,480.81	10,763.52	73.72	11.49	85.22

15. Construction Period

15.1 CPHGCL requested the Authority to allow IDC and ROEDC/ROE on construction period of 48 months. CPHGCL referred the Upfront Tariff which states that *"The allowed construction period for the generation facility is 48 months"*.

15.2 While examining the PPA that, the definition of Required COD (RCOD) stated that *"Means 1st August 2019, as such date may be extended pursuant to section 6.5 or section 8.1(b) or by a reason of Force Majeure Event"*

15.3 According to the information provided by CPHGCL, the Notice to Proceed (NTP) date of CPHGCL was November 01, 2016 and RCOD as per PPA was August 01, 2019. CPHGCL stated that the Company achieved Financial Close (FC) on January 26, 2018 notified by Private Power Infrastructure Board (PIBB) letter dated January 26, 2018, thus the actual construction time period works out as 33 months and 17 days (i.e. from NTP date to at COD date - November 01, 2016 to August 17, 2019).

15.4 In the Upfront tariff, IDC and RoEDC was assumed on the construction period of 48 months. However, when PPA was signed after the award of reference tariff, the CPHGCL agreed to construction period of 33 months meaning thereby, CPHGCL agreed with Power Purchaser for a discount of 15 months. In addition, the CPHGCL also agreed that in case of delay in construction period of 33 months, the Power Purchaser shall apply Liquidated Damages to the Company.

15.5 It is understood that the construction period allowed in any tariff determination is generally without any start and end date. These dates are made a part of binding contract between power purchaser and power producers through Power Purchase Agreements under which remedies are available and Liquidated Damages (LD) to be imposed based on non-performance of either party is well documented and agreed. So as a practice, the construction period allowed in tariff determinations are generic and considered as a

maximum ceiling and any delays beyond the allowed limit in the determination is not allowed. In instant case, CPHGCL has already agreed to a construction period of 33 months in the PPA.

- 15.6 Keeping in view the aforesaid fact, the Authority considered that CPHGCL itself agreed to 33 months construction period with CPPA-G in the PPA although 48 months were assumed in the reference tariff thus giving the benefit/discount to the consumers and the same has been allowed to CPHGCL.

16. **Capital Structure**

- 16.1 In the reference tariff, the Authority had assumed debt equity ratio of 75:25. Order para II(x) under Financing of Coal Projects states the following:

"1. The sponsor of the project can arrange foreign financing in American Dollar (\$), British Pound Sterling (£), Euro (€), Japanese Yen (Y) and Chinese Yuan (Y) or in any currency as the Government of Pakistan may allow.

2. The upfront tariff has been determined on the basis of debt equity ratio of 75:25;

3. The minimum equity shall be 20% and the maximum equity shall be 30%; if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as loan;"

- 16.2 CPHGCL has requested capital structure in accordance with the actual debt to equity ratio of 72.39:27.61.

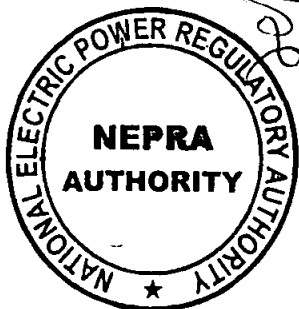
- 16.3 The Authority noted that the actual percentages of debt to equity ratio as per the audited financial statements for COD year is 77:23. In view thereof, the Authority has decided to allow actual percentages of capital structure i.e 77:23 (while relying on financial accounts regardless of the absolute amounts of debt to equity) which is within the allowed limit range provided in the reference tariff.

17. **Sinosure Fee:**

- 17.1 Reference Sinosure fee of US\$ 127.33 million was assumed in the reference tariff of CPHGCL. Adjustment at COD was provided in the reference tariff which is reproduced below:

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

- 17.2 CPHGCL submitted it has availed sinosure coverage from China Export and Credit Insurance Corporation (CECI). According to the Company, it has been able to secure better sinosure terms from CECI, than the Authority established benchmarks. According to the finalized terms, the Company is required to make payments to CECI in respect of sinosure fees @ 0.47% per annum on the outstanding loan principal plus interest. Accordingly upto COD, CPHGCL has paid US\$ 55.832 million on account of sinosure fee.



According to CPHGCL it has been able to save US\$ 94.301 million on account of sinosure fees compared to the benchmark stipulated by the Authority and requested sharing mechanism for savings in sinosure fee achieved with ratio of 60:40 between the power purchaser and CPHGCL. Thus US\$ 93.55 million (US\$ 55.83 million plus US\$ 37.72 million CPHGCL share of savings) was requested by CPHGCL to be allowed in the project cost as sinosure fee. In support of its claim CPHGCL submitted the schedule of payment under insurance policy, invoice of premium, payment evidence and policy (translated version).

- 17.3 The Authority in upfront tariff has allowed sinosure fee wherein the construction period cost of sinosure has not been included. Accordingly in line with the Upfront Tariff, assessed sinosure fee of US\$ 11.60 million pertaining to construction period has been disallowed. In view thereof the sinosure fee amounting to US\$ 40.79 million has been allowed to the Company.

18. **Financing Fee & Charges**

- 18.1 As per reference tariff, the Authority had allowed US\$ 41.91 million as financing fee & charges @ 3.5% of approved capex loan which at the time of reference tariff was based on capital structure of 75% debt and 25% equity. The relevant para of the reference tariff Part-II(x) under head Financing Fee and Charges is reproduced hereunder:

"Financing fee & charges are taken @ 3.5% of the borrowing to cater for the upfront fee, commitment fee, lenders' technical, financial and legal consultants' fee etc."

- 18.2 CPHGCL has requested the Authority an amount of US\$ 48.99 million as financing fees & charges calculated at the rate of 3.5% of the borrowing.
- 18.3 The assessed capex amount stands at US\$ 1,405.70 million. The amount of financing fees and charges at 3.5% on the borrowing (77% of capex) amount works out as US\$ 37.88 million and the same has been allowed to the Company.

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

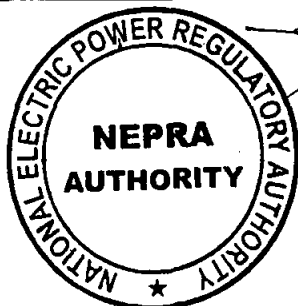
- 19.1 As per CPHGCL reference tariff, the Authority had allowed an Interest During Construction (IDC) on the basis of 75% of the CAPEX including customs duties and impact of Sinosure, as per the following reference parameters:

1 st Year	33.33%
2 nd Year	33.33%
3 rd Year	20.00%
4 th Year	13.33%

- 19.2 In the reference tariff, IDC was not required to be adjusted for any variation on account of actual expenditure percentage during the construction period. Similarly at the time of COD, IDC was required to be reestablished on the basis of indexed capital cost, actual custom duties & cess, withholding tax on contracts/services, actual premium on LIBOR & KIBOR subject to maximum of 4.5% and 3.5% respectively and the impact of Sinosure fee, if any. In addition, IDC is required to be recalculated on the basis of weighted average quarterly LIBOR/KIBOR during the construction period plus actual premium subject to

- the maximum limit on reference parameters. At the time of award of upfront tariff, CPHGCL was allowed an IDC of US \$ 144.58 million on the basis of its scheduled construction period of 48 months.
- 19.3 CPHGCL in its COD stage tariff adjustment has requested to allow the total IDC of US\$ 196.78 million on plant on the basis of its scheduled construction period of 48 months given in the tariff determination.
- 19.4 The Authority while considering documents submitted by CPHGCL noted that IDC should be worked out on the basis of time frame mutually agreed in the PPA between CPHGCL and power purchaser which is 33 months.
- 19.5 It has also been noted that long term loan has been injected in March 2018 (after the 14 months of NTP) however the construction time line is started from November 2016 ending in August 2019. This concludes that in 2016 and 2017 there was no long term loan. While reviewing the financial accounts provided by CPHGCL it was further observed that short-term loan was borrowed on LIBOR plus 1% which was injected in 2017 and matured in 2018. It was also observed that in 2018 long term loan was injected at LIBOR plus 3.8%.
- 19.6 As per Upfront Tariff, the IDC has to be reestablished on the basis of actual LIBOR and actual spread prevailing during the construction period. The Authority has also provided sharing mechanism in IDC with the ratio of 60:40 between the power purchaser and power producer.
- 19.7 In view of the aforesaid the spread of the 2016, 2017 are taken as 2.4% after sharing in accordance with the prescribed mechanism. Also for the period after short-term loan injection, effective spread works-out as of 4.08%. Accordingly the IDC amount for the construction period of plant has been worked out as US\$ 91.68 million on assessed debt of US\$ 1,113.80 million and the same has been allowed to the Company. It is pertinent to mention that the IDC has been worked out on the basis of construction period of 33 month in line with the PPA mutually agreed between the power producer and power purchaser.
20. **Project Cost:**
- 20.1 The adjusted project cost after incorporating the above one-time adjustments in the reference tariff is tabulated below:

Description	Million US\$ Cost
EPC Cost	
Plant CAPEX without customs duties	1,331.98
Jetty EPC	172.26
Jetty Non-EPC	8.61
Customs Duty & Cess (Plant)	73.72
Customs Duty & Cess (Jetty)	11.49
CAPEX	1,598.08



Financing Fees & Charges(Plant)	37.88
Financing Fees & Charges (Jetty)	-
Sinosure Fee	40.78
IDC (Jetty)	-
IDC (Plant)	91.68
Sub total	170.35
Total Project Cost	1,768.43

21. **Tariff Components:**

21.1 Summarizing the project cost, following adjustments/indexations at COD are allowed to CPHGCL as per the determination of the Authority:

Tariff Components	Tariff Indexation & Adjustment
Fuel Cost component	Delivered Fuel Price (inclusive of transportation) at the Power Plant
Variable O&M (Foreign) - Plant	US\$ to Pak Rupees & US CPI
Variable O&M (Local) - Plant	Pakistan CPI
Fixed O&M (Foreign) - Plant	US\$ to Pak Rupees & US CPI
Fixed O&M (Local) - Plant	Pakistan CPI
Variable O&M (Foreign) - Jetty	60% variation in Rs./US\$
Fixed O&M (Foreign) - Jetty	50% variation in Rs./US\$
Cost of Working Capital	Adjustments for relevant KIBOR variations
Return on Equity	US\$ to Pak Rupees
Principal Repayment (Foreign Currency)	US\$/Euro/Yen/Pound to Pak Rupees (based on borrowing by the Company)
Interest//Mark-up Payments (Foreign Currency Loan)	<ul style="list-style-type: none"> Adjustments for relevant LIBOR or other applicable Interest Rate benchmark Adjustment for variation in Rs./Foreign Currency (US\$/Euro/Yen/Pound) rates as applicable
Interest / Markup Payment (KIBOR)	Adjustments for relevant KIBOR variations

22. **Fuel Cost Component:**

22.1 Fuel cost component Rs. 4.2913/kWh was allowed in the tariff determination. CPHGCL requested FCC component for Rs. 6.3882/kWh at the time of COD. In addition fuel mechanism was also prescribed as per decision dated September 23, 2016 which will be modified from time to time.

22.2 As per Order Part-II(xix) the determination dated February 12, 2016:

- During the tariff period the fuel cost shall be calculated according to the following formula on monthly basis:



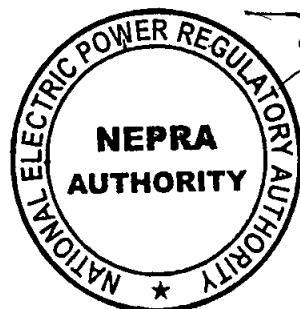
$$\begin{aligned}
 FCC = & \left(\left(CP_{(RB)} + Ft_{(M)} + MI + OC \pm Premium/Discount \right) \times \frac{HR}{HV_{(RB)}} \times \frac{Q_{(RB)}}{Q_{(T)}} \right) \\
 & \times FC_{(Exch)} \\
 & + \left(\left(CP_{(NCA)} + Ft_{(M)} + MI + OC \pm Premium/Discount \right) \times \frac{HR}{HV_{(NCA)}} \right. \\
 & \times \left. \frac{Q_{(NCA)}}{Q_{(T)}} \right) \times FC_{(Exch)} \\
 & + \left(\left(CP_{(NCI)} + Ft_{(M)} + MI + OC \pm Premium/Discount \right) \times \frac{HR}{HV_{(NCI)}} \right. \\
 & \times \left. \frac{Q_{(NCI)}}{Q_{(T)}} \right) \times FC_{(Exch)} + \left(CP_{(Local)} \times \frac{HR}{HV_{(Local)}} \times \frac{Q_{(Local)}}{Q_{(T)}} \right) + Ft_{(Inland)}
 \end{aligned}$$

Where;

- $CP_{(RB)}$ = Actual Weighted Average Richard Bay (South Africa) coal prices on the basis of Opening Inventory of coal and purchases of coal till the month immediately preceding the invoice month indicated in the Global coal
 $HV_{(RB)}$ = Actual Weighted Average Heating Value of the coal imported from South Africa
 $CP_{(NCA)}$ = Actual Average Newcastle (Australia) coal prices on the basis of Opening Inventory of coal and purchases of coal till the month immediately preceding the invoice month indicated in the Global coal
 $HV_{(NCA)}$ = Actual Weighted Average Heating Value of coal imported from Australia
 $CP_{(NCI)}$ = Actual Average Newcastle (Indonesia) coal prices on the basis of Opening Inventory of coal and purchases of coal till the month immediately preceding the invoice month indicated in the Global coal
 $HV_{(NCI)}$ = Actual Weighted Average Heating Value of coal imported from Indonesia
 $CP_{(Local)}$ = Actual Coal price of local coal expressed in US\$/M.Ton calculated according to the following formula;

$$\begin{aligned}
 CP_{(Local)} = & \left(\frac{HV_{(Local)}}{\left(\frac{Q_{(RB)}}{Q_{(T)}} \times HV_{(RB)} \right) + \left(\frac{Q_{(NCA)}}{Q_{(T)}} \times HV_{(NCA)} \right) + \left(\frac{Q_{(NCI)}}{Q_{(T)}} \times HV_{(NCI)} \right)} \right) \\
 & \times \left(\left(\frac{Q_{(RB)}}{Q_{(T)}} \times CP_{(RB)} \right) + \left(\frac{Q_{(NCA)}}{Q_{(T)}} \times CP_{(NCA)} \right) + \left(\frac{Q_{(NCI)}}{Q_{(T)}} \times CP_{(NCI)} \right) \right)
 \end{aligned}$$

- $HV_{(Local)}$ = Heating Value of Local Coal
 $Ft_{(M)}$ = Actual Weighted Average Contracted Marine Freight per ton from South Africa, Australia and Indonesia
 $Q_{(RB)}$ = Actual quantity of coal (Tons) purchased from South Africa during the month immediately preceding the invoice month



Q(NCA)	=	Actual quantity of coal (Tons) purchased from Australia during the month immediately preceding the invoice month
Q(NCI)	=	Actual quantity of coal (Tons) purchased from Indonesia during the month immediately preceding the invoice month
Q(Local)	=	Actual Quantity of local coal purchased during the month immediately preceding the invoice month
QT	=	Total quantity of coal purchased during the month immediately preceding the invoice month
Ft(Inl)	=	Actual Inland Freight expressed in Rs./M.Ton
OC	=	Other cost Include Bunker Fuel, Port Charges, Insurance & common Jetty facility in \$/Ton
FC(Exch)	=	PKR/\$ exchange rate average for the month

22.3 The revised FCC on the basis of 39.14% efficiency results as Rs. 6.3878/kWh.

23. Ash Handling:

23.1 In the reference tariff Ash Disposal cost of Rs 0.22 /kWh was based on the following assumptions:

Cost of Ash Disposal	
Ash produced	Kg.0.22/kWh
Ash Transportation cost	Rs.1000.00/M.Ton
Ash Disposal Cost	Rs.0.22/kWh

23.2 The reference tariff also stated that the above cost will be adjusted on actual basis at the time of COD.

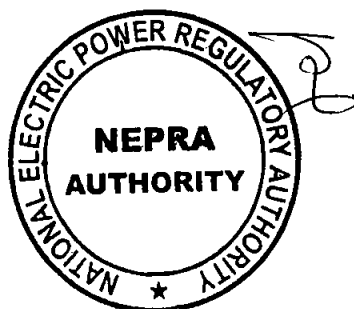
23.3 CPHGCL in its original COD request has not claimed any cost for ash handling however later CPHGCL requested the cost of ash disposal as Rs.0.0208/kWh. CPHGCL submitted documents in support such as advertisement published in newspaper, request for proposal document, actual payment records and monthly summary for the particular months from August 2019 to August 2020.

23.4 The Authority considers that Ash handling cost is different for each coal power project. In this regard letter has been issued to all coal power projects. In order to devise mechanism for coal power projects the Authority considers that separate proceedings have to be initiated. Accordingly in line with other coal power projects, the ash handling cost has been disallowed for the time being till such time proper mechanism is developed by the Authority through consultative session with the other stakeholders.

24. Limestone Cost:

24.1 In the reference tariff, cost of lime stone was based on the following parameters:

Cost of Lime Stone	
Cost of Lime Stone including Transportation	Rs.1250.00/M.Ton
Consumption	Kg.0.07/kWh
Cost of Lime Stone	Rs.0.09/kWh



24.2 In the reference tariff cost of limestone was to be adjusted at COD based on actual as mentioned in the reference tariff. The CPHGCL has not requested any cost for limestone in COD adjustment request.

24.3 In view of above, the Authority decided to dis-allow Limestone Cost allowed in reference tariff as Rs. 0.09/kWh subject to provision of revised claim on the basis of documentary evidence.

25. **O&M Cost Plant:**

25.1 In the reference tariff, CPHGCL was allowed fixed O&M local as Rs 0.1435 /kW/h, fixed O&M foreign as Rs. 0.1435/kW/hr, variable O&M local as Rs. 0.0456/kWh and variable O&M foreign as Rs 0.0684/kWh which was subject to indexation as per the following mechanism.

"d. 50% of the fixed O&M expenses shall be indexed with local CPI whereas 50% shall be indexed with US CPI and Exchange rate (PKR/US\$) variation.

e. 40% of the variable O&M shall be indexed with local CPI whereas 60% shall be indexed with US CPI and exchange rate (PKR/US\$) variation.

f. The reference CPI and US CPI will be of June 2014."

25.2 CPHGCL has indexed the O&M components of the reference tariff at COD stage according to the indexation mechanism laid out in the Upfront Tariff Determination. The summary of the indexed O&M components claimed by CPHGCL and allowed by the Authority has been listed below:

O&M Components	Unit	Reference Tariff	Indexed Tariff Claim	Indexed Tariff Assessed
Variable O&M – Foreign	PKR/kWh	0.0684	0.1245	0.1245
Variable O&M – Local	PKR/kWh	0.0456	0.0576	0.0576
Fixed O&M – Foreign	PKR/kW/hr	0.1435	0.2612	0.2537
Fixed O&M – Local	PKR/kW/hr	0.1435	0.1812	0.1760
Indexation Values:				
Local CPI		194.74	245.94	245.94
US CPI		238.34	256.09	256.09
Exchange Rate	PKR/USD	97.10	164.50	164.50

Note: Fixed O&M Cost is adjusted @ 1249.10 MW capacity, as per Order para 3 Part II(2) of the reference tariff.

26. **Jetty Coal Transshipment Services (CTS) & O&M cost of Jetty**

26.1 **Coal Transshipment Services (CTS):**

26.1.1 The CPHGCL submitted that CTS charges for post-COD period has been fixed as US\$ 52,000/- day which needs to be revised in line with the mechanism prescribed in the Jetty CTS decision dated July 28, 2017. The CPHGCL requested as follows:



Tariff Components	CTS	Reference Tariff	Claimed Tariff
CTS Fixed Charge Rs/kWh	USD 52,000/day	0.1734	0.3148
CTS Fixed Charge Rs./kWh Pre-COD	USD 26,000/day	0.0866	0.1574
CTS Variable Charge Rs./kWh			
CTS Variable Local	USD 0.43/ton	0.0167	0.0203
Bunker Cost	USD 0.79/Ton	0.0307	0.0718

26.1.2 The Authority observed that the net capacity has been revised from 1213.187 MW to 1249.10 MW which has not been taken up by the CPHGCL while calculating the revised claim. Accordingly after adjusting the same, the CTS fixed charges has been worked out on account of US\$/PKR exchange rate variation and 80% of CF indexed with US ECI annual as under:

Tariff Components	CTS	Reference Tariff	Revised Tariff
CTS Fixed Charge Rs/kW/h	USD 52,000/day	0.1734	0.2990

- US\$/PKR 164.50 & US ECI 141.2

26.1.3 As regards Pre-COD CTS fixed charges, the same has been allowed in fuel price adjustments during Pre-COD period. CTS variable O&M cost of US\$ 0.43/ton and Bunker Cost (fuel) of US\$ 0.79/ton are subject to adjustment with local CPI annually and monthly fuel price of Light Diesel Oil (LDO) at Karachi respectively. The same are being considered in the monthly fuel price adjustments.

27. Jetty O&M:

27.1 Jetty O&M decision was issued on August 07, 2019 according to which the same is subject to adjustment based on net capacity at the time of COD. The Authority decision is reproduced as under;

"The Authority has decided to approve total Jetty O&M cost of 17,703,509 (without taxes) comprising of US\$ 13,903,509 and US\$ 3,800,000 on account of fixed and variable O&M cost respectively. This translates in fixed cost of US\$ 2.78 million per annum and variable cost of US\$ 0.19/ton."

27.2 Accordingly the tariff components of Jetty O&M allowed in reference tariff are as under:

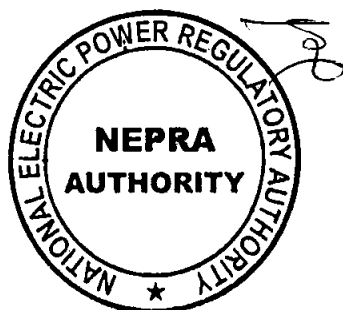
Component	Tariff	Indexation
Fixed O&M Fee Jetty (Rs./kW/hr)	0.0254	50% variation in the Rs./US\$
Variable O&M Fee Jetty (Rs. /kWh)	0.0074	60% variation in Rs. /US\$

- Fee calculations of variable O&M upper limit of design coal LHV 5,500 kcal/kg has been used
- Reference exchange rate is Rs. 97.10/USD

27.3 The Petitioner requested the Authority to allow following tariff:

Component	Tariff	Indexation
Fixed O&M Fee Jetty (Rs./kW/hr)	0.0342	50% variation in the Rs./US\$
Variable O&M Fee Jetty (Rs. /kWh)	0.0105	60% variation in Rs. /US\$

- Reference exchange rate is Rs. 97.10/USD



27.4 After adjusting the fixed O&M Fee Jetty with the net capacity and indexation as per prescribed mechanism, the allowed components are as under:

Component	Tariff	Indexation
Fixed O&M Fee Jetty (Rs./kW/hr)	0.0332	50% variation in the Rs./US\$
Variable O&M Fee Jetty (Rs. /kWh)	0.0105	60% variation in Rs. /US\$

- Fee calculations of variable O&M upper limit of design coal LHV 5,500 kcal/kg has been used
- Reference exchange rate at COD is Rs. 164.5/USD

28. **Cost of Working Capital:**

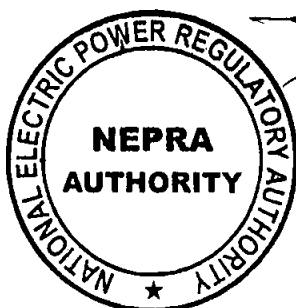
28.1 In the reference tariff, working capital component of Rs. 0.2276 per kW/hr was allowed. CPHGCL has claimed working capital component of Rs. 0.3691/ kW/h at the COD stage and requested to allow the reference KIBOR for future indexations.

28.2 As per Order para 3, Para-II(xvii) of the determination, Cost of Working Capital shall be adjusted as per relevant KIBOR variation. Basis of computation of Cost of Working Capital were set in the decision as per following.

- In case of imported coal the inventory will be equivalent to 90 days at 100% plant load.
 - Receivables equivalent to one month of fuel charges at 100% plant load.
- Interest on Working Capital has been calculated on the basis of quarterly-KIBOR of 11.91% plus 200 basis point, which will be adjusted for variation in quarterly-KIBOR and weighted average cost of coal inventory.
 - In case of mix usage of coal Interest on Working Capital shall be adjusted according to the following mechanism;

$IWC_{(Mix)}$	=	$IWC_{(L)} \times ((Q(L) \times CV(L)) / (Q(L) \times CV(L) + Q(I) \times CV(I))) +$ $IWC_{(I)} \times ((Q(I) \times CV(I)) / (Q(L) \times CV(L) + Q(I) \times CV(I)))$
Where:		
$IWC_{(Mix)}$	=	Interest on Working Capital for mix fuel i.e. Local and Imported
$IWC_{(L)}$	=	Interest on Working Capital Component for Local Coal
$IWC_{(I)}$	=	Interest on Working Capital Component for Imported Coal
$Q(L)$	=	Quantity in Metric Ton of local coal consumed during the month
$CV(L)$	=	Weighted average CV of local coal consumed during the month
$Q(I)$	=	Quantity in Metric Ton of imported coal consumed during the month
$CV(I)$	=	Weighted average CV of imported coal consumed during the month

28.3 This component has been based on the 90 days fuel inventory. As a prudent utility practice and matter of principal and justice, CPHGCL is required to maintain such level of inventory in line with the PPA.



- 28.4 CPPA-G is required to ensure to maintain an on-site inventory of 45 days otherwise the consumers shouldn't be burdened with a cost which is not even incurred by the project companies. In case of non-compliance the matter be referred to the Authority for adjustment of tariff components.
- 28.5 In view of the preceding paragraphs and in the light of the documentary evidence it is noted that at the time of COD, cost of working capital will be adjusted as per the relevant KIBOR variation. Cost of working capital has been revised on the basis of fuel cost component, total net capacity, rate of general sales tax, exchange rate and KIBOR variation. Therefore the component for cost of working capital has been worked out Rs. 0.3540/kWh against the claimed Rs. 0.3691/kWh.

29. Insurance during Operation:

- 29.1 The Authority allowed Rs. 0.1021/kWh as Insurance component in reference tariff. The Order para 3 Part-II(xvi) of reference tariff is reproduced below:

"During the term of the Agreement, insurance component of tariff will be adjusted on the basis of actual insurance cost with maximum of 1% of the 70% of Capital Cost determined under (vii) above converted into Pak Rupees on the basis of Rs.-US\$ parity prevailing on the 1st day of the start of each Agreement Year. The reference insurance premium used in the calculation of insurance component of tariff is Rs. 542.65 million".

- 29.2 CPHGCL requested Rs. 645.2 million or component of Rs. 0.0590/kW/hr as insurance during operations and submitted documents in support thereof i.e. insurance policies, payments, bank statements etc.
- 29.3 It was noted that the claimed amount included insurance pertaining to Vehicles, Employees and Fire which are not covered under the Insurance schedule VIII of PPA. Therefore restricting the Insurance amount on the allowed Insurance policies as per the PPA results as Rs. 623.76 million. The assessed Insurance amount being lower than the allowed limit is thus being allowed to CPHGCL, which amounts to Rs. 0.0570/kW/hr.

30. Return On Equity (including Return On Equity during Construction) ROE & ROEDC

- 30.1 CPHGCL submitted that based on IRR of 17% approved in upfront tariff, a component of Rs. 1.1872 per kW/h was incorporated in upfront tariff as return on equity (hereinafter referred to as "RoE"). The RoE component was required to be adjusted on the basis of revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan.
- 30.2 Part-II(xii) of the determination stated that the return on equity shall be 27.2%. In case of use of mix coal the ROE will be adjusted according to the following formula:

ROE(Mix)	=	$\frac{ROE(L) \times ((Q(L) \times CV(L)) / ((Q(L) \times CV(L) + Q(I) \times CV(I))) + ROE(I) \times ((Q(I) \times CV(I)) / ((Q(L) \times CV(L) + Q(I) \times CV(I)))}$
Where:		
ROE(Mix)	=	Return on Equity for mix fuel i.e. Local and Imported
ROE(L)	=	Return on Equity component on local coal i.e. 29.5%
ROE(I)	=	Return on Equity component on imported coal i.e. 27.2%

Q(L)	=	Quantity in Metric Ton of local coal consumed during the month
CV(L)	=	Weighted average CV of local coal consumed during the month
Q(I)	=	Quantity in Metric Ton of imported coal consumed during the month
CV(I)	=	Weighted average CV of imported coal consumed during the month

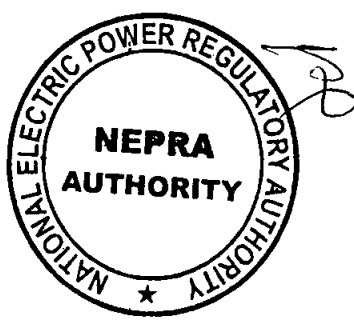
- 30.3 CPHGCL has requested to allow Rs. 2.4567/kW/hr on account of ROE. CPHGCL submitted that indexation may be allowed in accordance with the reference tariff.
- 30.4 Based on the Authority's finding discussed in the previous paras under the capital structure of CPHGCL wherein equity portion has been determined as 23% or US\$ 406.74 million, the revised RoE components based on weighted average exchange of Rs. 119.15/US\$, construction period of 33 months, works out as Rs 1.0034/kW/h and the same has been allowed to CPHGCL.
- 30.5 The Authority noted that RoE component in the reference tariff is based on annual computations, therefore, the Authority decided to direct CPPA-G to ensure RoE payments to CPHGCL on annual basis so that the payment of RoE component and its component working is in line.

31. Debt Service:

- 31.1 In the upfront tariff, the Authority had assessed debt servicing component of Rs. 1.6692/kW/h on basis of debt equity ratio of 75:25. For the purpose of adjustment at COD stage, the minimum and maximum equity allowed under tariff was from 20% to 30%.
- 31.2 The reference LIBOR used for calculating debt servicing is to be adjusted for variation in quarterly LIBOR rates. The maximum allowed spread over LIBOR in upfront tariff is 4.5%. The tariff determination had incentivized that in case spread is negotiated at less than the allowed limit, the saving is to be shared in ratio of 60:40 between power purchaser and the power producer respectively
- 31.3 CPHGCL has claimed debt servicing component of Rs. 3.2244/ kWh at the COD stage and requested to allow the reference LIBOR for future indexations. CPHGCL stated in its COD request that on foreign borrowing, 3.80% has been agreed with the lenders on LIBOR based financing.
- 31.4 The Authority in the instant case has assessed debt amount as US\$ 1,361.69 million. Accordingly based on the actual percentage of debt in the audited financial statements, the debt servicing component has been worked out as Rs. 2.0131/kW/h at the COD stage, which includes debt component of Rs. 1.0994/kW/h and Interest charges of Rs. 0.9137/kW/h for the first year. The same is allowed to the Company.

32. Order

- 32.1 Pursuant to section 7(3)(a) of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read with Rule 6 of the NEPRA Licensing (Generation) Rules, 2000, China Power Hub Generation Company (Pvt.) Limited

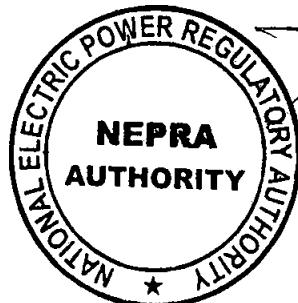


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(CPHGCL) 1320 MW Coal based Generation Facility (1249.1 MW net) located at Hub - Balochistan is allowed to charge the following specified tariff along with adjustments/indexations for delivery of electricity to the power purchaser:

Reference Tariff Table (COD)		
Tariff Components	Years	
Capacity Charges (PKR/kW/Hour)	1-10	11-30
Power Plant -Fixed O&M – Local	0.1760	0.1760
Power Plant-Fixed O&M – Foreign	0.2537	0.2537
Jetty- Fixed O&M	0.0332	0.0332
Jetty CTS Fixed Charges	0.2990	0.2990
Working Capital	0.3540	0.3540
Insurance	0.0570	0.0570
Return on Equity	1.0034	1.0034
Debt Servicing	2.0131	-
Total Capacity Charges	4.1894	2.1763
Energy Charges Rs./kWh		
Fuel cost Component	6.3878	6.3878
Ash Disposal	-	-
Lime Stone	-	-
Power Plant-Variable O&M-foreign	0.1245	0.1245
Power Plant- Variable O&M – Local	0.0576	0.0576
Jetty –Variable O&M	0.0105	0.0105
Total Energy Charges	6.5804	6.5804

- The reference tariff has been calculated on the basis of net annual production of 10,942.12 GWh.
- Pursuant to *Order* of reference tariff, Part II paragraph viii(2) of the reference tariff of CPHGCL, it is mandatory on CPPA-G to provide the approval of acceptance of the heat rate test conducted by CPHGCL at COD establishing thermal efficiency of 39.14%.
- The reference PKR/Dollar rate has been assumed for ROE/Debt as US\$/PKR 119.15.
- The above tariff is applicable for a period of thirty (30) years commencing from the date of the COD.
- Debt service will be paid in the first 10 years of commercial operation of plant after COD.
- The Tariff Table is indicated at Annex-I.
- Foreign Debt Servicing Schedule is attached as Annex-II.
- The sole criterion for dispatch of power plants shall be the "merit order dispatch"
- The coal based generation facility shall be subjected to scheduling and dispatch code as specified under NEPRA Grid Code.
- The guaranteed availability of the plants will be 85%.
- CPPA-G to ensure RoE payments to CPHGCL be made on annual basis so that the payment of RoE component and its working is in line.
- CTS fixed charges and Jetty O&M cost (fixed + variable) has been included in the tariff table whereas the CTS variable O&M and bunker cost (fuel) are adjusted in monthly fuel price adjustment.



I. Indexations:

The following indexations shall be applicable to the reference tariff;

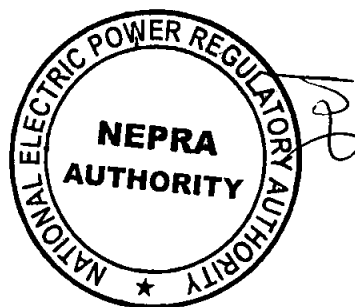
Tariff Components	Tariff Indexation & Adjustment
Fuel Cost component	Delivered Fuel Price (inclusive of transportation at the power plant)
Variable O&M (Foreign)	US\$ to Pak Rupees & US CPI
Variable O&M (Local)	Pakistan CPI (subject to amendment by PBS from time to time)
Fixed O&M (Foreign)	US\$ to Pak Rupees & US CPI
Fixed O&M (Local)	Pakistan CPI (subject to amendment by PBS from time to time)
Cost of Working Capital	Adjustments for relevant KIBOR variations
Return on Equity	US\$ to Pak Rupees
Principal Repayment (Foreign Currency)	US\$/Euro/Yen/Pound to Pak Rupees (based on borrowing by the Company)
Interest//Mark-up Payments (Foreign Currency Loan)	Adjustments for relevant LIBOR or other applicable Interest Rate benchmark Adjustment for variation in Rs./Foreign Currency (US\$/Euro/Yen/Pound) rates as applicable
Interest/Mark-up Payments (Local Currency Loan)	Adjustments for relevant KIBOR variations
CTS Fixed Charges	80% of CF shall be indexed with US CPI annual and US ECI
CTS Variable O&M	100% of cost shall be indexed with local CPI annually. The same has been treated in fuel price therefore no separate indexation is required.
CTS Bunker Cost (fuel)	100% of the cost shall be indexed with Light Diesel Oil (LDO) price at Karachi. The bunker cost (fuel) is also part of fuel price therefore no separate indexation is required
Jetty O&M Fixed (Rs./kW/hr)	50% variation in Rs./US\$
Jetty O&M Variable (Rs./kWh)	60% variation in Rs./US\$

i. Adjustment applicable Fuel Cost Component:

Fuel cost component has been revised at COD on the basis of 39.14% efficiency results as Rs. 6.3878/kWh. The same has been determined as per prescribed mechanism vide decision dated September 23, 2016 which will be modified from time to time.

As per Order Part-II(xix) the determination dated February 12, 2016:

- During the tariff period the fuel cost shall be calculated according to the following formula on monthly basis:



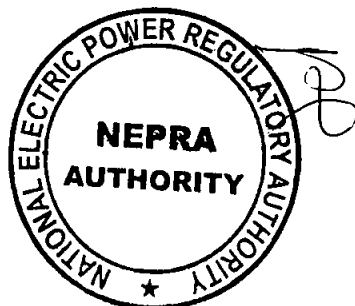
$$\begin{aligned}
 FCC = & \left(\left(CP_{(RB)} + Ft_{(M)} + MI + OC \pm Premium/Discount \right) \times \frac{HR}{HV_{(RB)}} \times \frac{Q_{(RB)}}{Q_{(T)}} \right) \\
 & \times FC_{(Exch)} \\
 & + \left(\left(CP_{(NCA)} + Ft_{(M)} + MI + OC \pm Premium/Discount \right) \times \frac{HR}{HV_{(NCA)}} \right. \\
 & \times \left. \frac{Q_{(NCA)}}{Q_{(T)}} \right) \times FC_{(Exch)} \\
 & + \left(\left(CP_{(NCI)} + Ft_{(M)} + MI + OC \pm Premium/Discount \right) \times \frac{HR}{HV_{(NCI)}} \right. \\
 & \times \left. \frac{Q_{(NCI)}}{Q_{(T)}} \right) \times FC_{(Exch)} + \left(CP_{(Local)} \times \frac{HR}{HV_{(Local)}} \times \frac{Q_{(Local)}}{Q_{(T)}} \right) + Ft_{(Inland)}
 \end{aligned}$$

Where;

- $CP_{(RB)}$ = Actual Weighted Average Richard Bay (South Africa) coal prices on the basis of Opening Inventory of coal and purchases of coal till the month immediately preceding the invoice month indicated in the Global coal
 $HV_{(RB)}$ = Actual Weighted Average Heating Value of the coal imported from South Africa
 $CP_{(NCA)}$ = Actual Average Newcastle (Australia) coal prices on the basis of Opening Inventory of coal and purchases of coal till the month immediately preceding the invoice month indicated in the Global coal
 $HV_{(NCA)}$ = Actual Weighted Average Heating Value of coal imported from Australia
 $CP_{(NCI)}$ = Actual Average Newcastle (Indonesia) coal prices on the basis of Opening Inventory of coal and purchases of coal till the month immediately preceding the invoice month indicated in the Global coal
 $HV_{(NCI)}$ = Actual Weighted Average Heating Value of coal imported from Indonesia
 $CP_{(Local)}$ = Actual Coal price of local coal expressed in US\$/M.Ton calculated according to the following formula;

$$\begin{aligned}
 CP_{(Local)} = & \left(\frac{HV_{(Local)}}{\left(\frac{Q_{(RB)}}{Q_{(T)}} \times HV_{(RB)} \right) + \left(\frac{Q_{(NCA)}}{Q_{(T)}} \times HV_{(NCA)} \right) + \left(\frac{Q_{(NCI)}}{Q_{(T)}} \times HV_{(NCI)} \right)} \right) \\
 & \times \left(\left(\frac{Q_{(RB)}}{Q_{(T)}} \times CP_{(RB)} \right) + \left(\frac{Q_{(NCA)}}{Q_{(T)}} \times CP_{(NCA)} \right) + \left(\frac{Q_{(NCI)}}{Q_{(T)}} \times CP_{(NCI)} \right) \right)
 \end{aligned}$$

- $HV_{(Local)}$ = Heating Value of Local Coal
 $Ft_{(M)}$ = Actual Weighted Average Contracted Marine Freight per ton from South Africa, Australia and Indonesia
 $Q_{(RB)}$ = Actual quantity of coal (Tons) purchased from South Africa during the month immediately preceding the invoice month

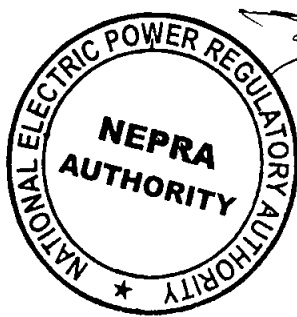


$Q_{(NCA)}$	=	Actual quantity of coal (Tons) purchased from Australia during the month immediately preceding the invoice month
$Q_{(NCI)}$	=	Actual quantity of coal (Tons) purchased from Indonesia during the month immediately preceding the invoice month
$Q_{(Local)}$	=	Actual Quantity of local coal purchased during the month immediately preceding the invoice month
Q_T	=	Total quantity of coal purchased during the month immediately preceding the invoice month
$Ft_{(Inl)}$	=	Actual Inland Freight expressed in Rs./M.Ton
OC	=	Other cost Include Bunker Fuel, Port Charges, Insurance & common Jetty facility in \$/Ton
$FC_{(Exch)}$	=	PKR/\$ exchange rate average for the month

ii. Indexation applicable to O&M

O&M components of tariff shall be adjusted on account of local Inflation (CPI), 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:

$F V. O\&M_{(REV)}$	=	$F V. O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$
$L V. O\&M_{(REV)}$	=	$L V. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
$L F. O\&M_{(REV)}$	=	$L F. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
$F F. O\&M_{(REV)}$	=	$F F. O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$
Where:		
$F V. O\&M_{(REV)}$	=	The revised Variable O&M Foreign Component of Tariff
$L V. O\&M_{(REV)}$	=	The revised Variable O&M Local Component of Tariff
$L F. O\&M_{(REV)}$	=	The revised Fixed O&M Local Component of Tariff
$F F. O\&M_{(REV)}$	=	The revised Fixed O&M Foreign Component of Tariff
$F V. O\&M_{(REF)}$	=	The reference Variable O&M Foreign Component of Tariff which is Rs. 0.1245/kWh
$L V. O\&M_{(REF)}$	=	The reference Variable O&M Local Component of Tariff which is Rs. 0.0576/kWh
$L F. O\&M_{(REF)}$	=	The reference Fixed O&M Local Component of Tariff which is Rs. 0.1760/kWh
$F F. O\&M_{(REF)}$	=	The reference Fixed O&M Foreign Component of Tariff which is Rs. 0.2537/kWh
$CPI_{(REV)}$	=	The revised CPI (General) notified by Pakistan Bureau of Statistics (PBS)
$CPI_{(REF)}$	=	The reference CPI (General) of 245.940 for May 2019
$US CPI_{(REV)}$	=	The revised US CPI (All Urban Consumers) notified by US Bureau of Labor Statistics
$US CPI_{(REF)}$	=	The reference US CPI of 256.092 for May 2019
$ER_{(REV)}$	=	The revised TT& OD selling rate of US dollar



ER _(REF)	=	The reference TT& OD selling rate of Rs. 164.50/US\$ of last day of the preceding quarter i.e June 28, 2019
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- The Local CPI notified by PBS shall be subject to revision on account of re-basing by PBS

iii. Indexation of Jetty O&M & CTS

The CTS & Jetty O&M has been revised in line with the mechanism prescribed in the original reference tariff dated July 28, 2017 and August 07, 2019 which are as under:

Jetty O&M shall be indexed as per following mechanism:

Tariff Components	Reference Tariff at COD	Indexation
Fixed O&M Fee Jetty (Rs./kW/hr)	0.0332	50% variation in Rs./US\$
Variable O&M Fee Jetty (Rs./kWh)	0.0105	60% variation in Rs./US\$

- Reference exchange rate US\$/PKR 164.50

CTS fixed charges has been worked out on account of US\$/PKR exchange rate variation and 80% of CF indexed with US ECI annual as under:

Tariff Components	CTS	Reference Tariff at COD	Indexation
CTS Fixed Charge Rs/kW/h	USD 52,000/day	0.2990	80% of CF shall be indexed with US CPI annual.

- Reference exchange rate US\$/PKR 164.50 & US ECI 141.2
- CTS variable O&M determined as USD/Ton 0.43 (100% of cost shall be indexed with local CPI annually) has already been accounted for in the monthly fuel price mechanism. Similarly the CTS bunker cost (fuel) of USD/Ton 0.79 (100% of cost shall be indexed monthly with Light Diesel Oil (LDO) price at Karachi) is also made part of monthly fuel price of CPHGCL.

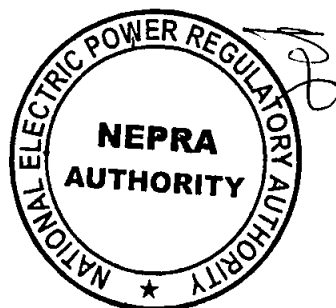
iv. Adjustment in Insurance as per actual

The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser not exceeding 1% of the 70% of the Capital cost shall 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 following formula:

AIC	=	$\text{Ins}_{(\text{Ref})} / \text{P}_{(\text{Ref})} * \text{P}_{(\text{Act})}$
Where		
AIC	=	Adjusted Insurance Component of Tariff
Ins _(Ref)	=	Reference Insurance Component of Tariff
P _(Ref)	=	Reference Premium US\$ 4.01 million at Rs. 623.76 million.
P _(Act)	=	Actual Premium or 1% of the 70% of the Capital cost at exchange rate prevailing on the 1st day of the insurance coverage period whichever is lower

v. Cost of Working Capital

During operational period, the cost of working capital shall be adjusted quarterly for variation in KIBOR and fuel prices only. CPHGCL to strictly adhere to the requirements for the imported coal inventory level to be maintained as per the working capital



component allowed in this tariff. The CPHGCL should ensure that reliable supply chain mechanism exists for fuel for the power generation complex (1320 MW) to ensure consistent power supply to national grid and required inventory level exists. To avoid any adverse impact, CPPA (G) Limited to strictly ensure compliance to legal covenants, particularly Article IX and section 5.14 of PPA dated January 25, 2017, as mutually agreed by CPPA and CPHGCL.

vi. Indexation of Return on Equity (ROE)

ROE component of tariff shall be quarterly indexed on account of variation in Rs./US\$ parity according to the following formula:

$ROE_{(Rev)}$	=	$ROE_{(Ref)} * ER_{(Rev)} / ER_{(Ref)}$
Where;		
$ROE_{(Rev)}$	=	Revised ROE Component of Tariff
$ROE_{(Ref)}$	=	Reference ROE Component of Tariff
$ER_{(Rev)}$	=	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 of Rs. 119.15/US\$

vii. Indexation applicable to Debt

Foreign debt and its interest shall be adjusted for exchange rate variation quarterly on 1st July, 1st October, 1st January and 1st April 1st January & 1st July TT & OD selling rate of US dollar for the quarter immediately preceding the relevant period as notified by the National Bank of Pakistan, wherein the reference TT& OD selling rate is Rs. 119.15/US\$.

viii. Indexation for LIBOR Variation

The interest part of capacity 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 according to the following formula;

ΔI	=	$P_{(REV)} * (LIBOR_{(REV)} - 2.26\%) / 4$
Where:		
ΔI	=	The variation in interest charges applicable corresponding to variation in 3 months LIBOR. ΔI can be positive or negative depending upon whether $LIBOR_{(REV)}$ is > or < 2.26%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each quarter under adjustment applicable on quarterly basis.
$P_{(REV)}$	=	The outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculation date. Period 1 shall commence on the date on which the 1 st installment is due after availing the grace period.

II. General Conditions

- (1) In case of use of mix coal the ROE will be adjusted according to formula provided in the approval granted by the Authority.
- (2) In case of discovery of any further evidence or misinformation or concealment of any fact, NEPRA reserves the right to amend, modify and rescind its determination accordingly.

III. Definitions and Interpretations

- (a) "Auxiliary energy consumption" means the quantum of energy consumed by auxiliary equipment of the generating facility, and transformer losses within the generating facility, expressed in Megawatts as well as in percentage of the sum of gross output at the generator terminals of all the units of the generating plant;
- (b) "Capital cost" means the cost of all capital work including plant and machinery, civil work, erection and commissioning and evacuation infrastructure up to inter-connection point;
- (c) "Control Period" means the period required to achieve the financial close and complete the construction of generation facility. The Control Period shall be of six years starting from the date of unconditional opting of the upfront tariff.
- (d) "Design Coal" means the ideal type of coal or fuel that is selected to be used during performance testing of steam generators in power plant engineering;
- (e) "Grace Period" means a period equivalent to the construction period of the coal project.
- (f) "Installed capacity" means the summation of the name plate capacities of all the units of the generating facility or the capacity of the generating facility (reckoned at the generator terminals), approved by the Authority from time to time as indicated in the generation license;
- (g) "Inter-connection Point" shall mean interface point of energy generating facility with the transmission system or distribution system, as the case may be;
- (h) "Operation and maintenance expenses" or 'O&M expenses' means the expenditure incurred on operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, repairs, spares, consumables and overheads;
- (i) "Project" means a generating facility or the evacuation system up to inter-connection point;
- (j) "Tariff period" means the period for which the upfront tariff has been determined by the Authority on the basis of reference parameters which in the instant case is 30 years. The tariff period shall commence from the date of commercial operation.
- (k) 'Useful Life' in relation to a unit of a generating facility including evacuation system shall mean the period during which the generating facility including

evacuation system is expected to be usable for the purpose of generating electricity from the date of commercial operation (COD) of such generation facility, namely coal based power project is 30 years;

(l) "Year" means a period of 12 months.

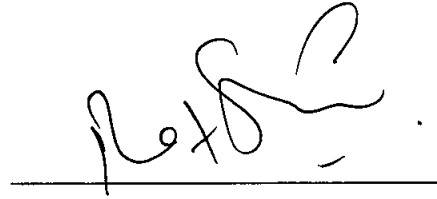
IV. The above Order of the Authority along with revised tariff table and debt servicing schedules as attached thereto as Annex-I & II shall be notified in the Official Gazette in terms of Section 31(7) of the Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997.

AUTHORITY



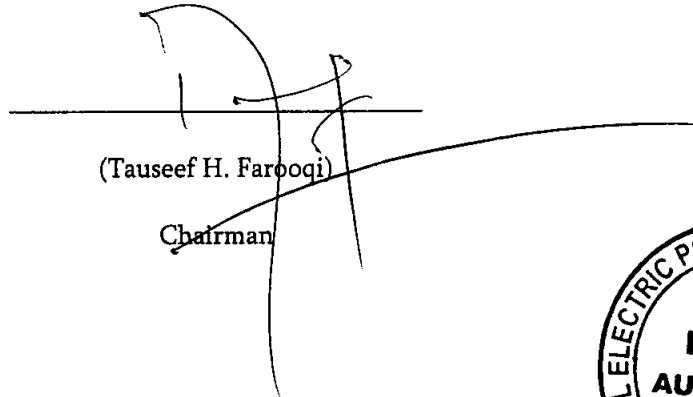
(Engr. Maqsood Anwar Khan)

Member



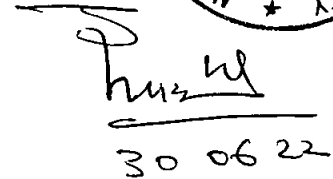
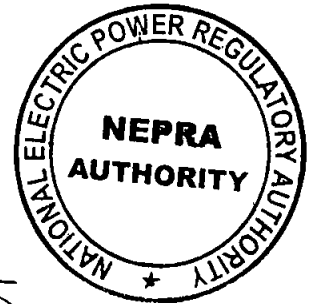
(Rafique Ahmed Shaikh)

Member



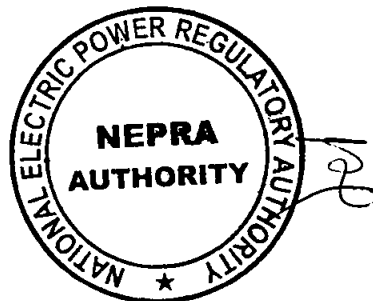
(Tauseef H. Farooqi)

Chairman



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CPHGCL Tariff Table for 1,320 MW on Foreign Financing along with Jetty																			Annex-I		
Sl. No.	Category	Ash Disposal	Cost	Variable O&M (Plant)			Total O&M (Plant)	Fixed O&M (Plant)			Fixed O&M (Jetty)	Capacity / Purchase Price (₹/KWh/Year)			ROE	Debt Repayment	Interest Charge	Capacity (MW)	Total	Total	
				Local	Foreign	Jetty		Local	Foreign	Cost of W/C		Insurance	₹/KWh	₹/Year					₹/Year	₹/Year	₹/Year
1	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.0994	0.9137	4.1895	4.9288	11.5092	9.6923	
2	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.1707	0.8424	4.1895	4.9288	11.5092	9.6923	
3	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.2467	0.7664	4.1895	4.9288	11.5092	9.6923	
4	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.3276	0.6855	4.1895	4.9288	11.5092	9.6923	
5	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.4137	0.5994	4.1895	4.9288	11.5092	9.6923	
6	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.5054	0.5077	4.1895	4.9288	11.5092	9.6923	
7	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.6031	0.4100	4.1895	4.9288	11.5092	9.6923	
8	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.7071	0.3080	4.1895	4.9288	11.5092	9.6923	
9	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.8179	0.1952	4.1895	4.9288	11.5092	9.6923	
10	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.9359	0.0773	4.1895	4.9288	11.5092	9.6923	
11	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
12	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
13	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
14	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
15	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
16	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
17	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
18	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
19	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
20	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
21	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
22	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
23	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
24	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
25	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
26	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
27	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
28	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
29	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
30	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
Average																					
1-10	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	1.4827	0.5304	4.1895	4.9288	11.5092	9.6923	
11-30	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.0000	0.0000	2.1763	2.5604	9.1408	7.6978	
1-30	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.4942	0.1768	2.8474	3.3499	9.9302	8.3626	
Levelized																					
1-30	6.3878	0.0000	0.0000	0.1245	0.0576	0.0105	6.5804	0.1760	0.2537	0.0332	0.2990	0.3540	0.0570	1.0034	0.9202	0.3920	3.4885	4.1041	10.6845	8.9978	



CPHGCL Debt Servicing on Foreign Financing

Annex-II

Gross Capacity	1320.00	MW	US\$/PKR Parity	119.15
Net Capacity	1249.10	MW	Equity	48,462.55
LIBOR	2.26%		Debt	1,361.69
Spread over LIBOR	4.08%		Debt in Pak Rupees	162,244.18
Total Interest Rate	6.34%			

Period	Principal Million \$	Principal Repayment Million \$	Interest Million \$	Balaance Million \$	Debt Service Million \$	Principal Repayment Rs./kW/h	Interest Rs./kW/h	Debt Servicing Rs./kW/h
1	1,361.69	24.65	21.57	1,337.04	46.22			
2	1,337.04	25.04	21.18	1,312.01	46.22			
3	1,312.01	25.44	20.78	1,286.57	46.22			
4	1,286.57	25.84	20.38	1,260.73	46.22	1.0994	0.9137	2.0131
1st Year		100.96	83.91		184.88			
5	1,260.73	26.25	19.97	1,234.48	46.22			
6	1,234.48	26.66	19.56	1,207.82	46.22			
7	1,207.82	27.09	19.13	1,180.73	46.22			
8	1,180.73	27.52	18.70	1,153.22	46.22	1.1707	0.8424	2.0131
2nd Year		107.51	77.36		184.88			
9	1,153.22	27.95	18.27	1,125.27	46.22			
10	1,125.27	28.39	17.83	1,096.87	46.22			
11	1,096.87	28.84	17.38	1,068.03	46.22			
12	1,068.03	29.30	16.92	1,038.73	46.22	1.2467	0.7664	2.0131
3rd Year		114.49	70.39		184.88			
13	1,038.73	29.76	16.45	1,008.96	46.22			
14	1,008.96	30.24	15.98	978.73	46.22			
15	978.73	30.72	15.50	948.01	46.22			
16	948.01	31.20	15.02	916.81	46.22	1.3276	0.6855	2.0131
4th Year		121.92	62.96		184.88			
17	916.81	31.70	14.52	885.11	46.22			
18	885.11	32.20	14.02	852.91	46.22			
19	852.91	32.71	13.51	820.21	46.22			
20	820.21	33.23	12.99	786.98	46.22	1.4137	0.5994	2.0131
5th Year		129.83	55.05		184.88			
21	786.98	33.75	12.47	753.23	46.22			
22	753.23	34.29	11.93	718.94	46.22			
23	718.94	34.83	11.39	684.11	46.22			
24	684.11	35.38	10.84	648.73	46.22	1.5054	0.5077	2.0131
6th Year		138.25	46.62		184.88			
25	648.73	35.94	10.28	612.78	46.22			
26	612.78	36.51	9.71	576.27	46.22			
27	576.27	37.09	9.13	539.18	46.22			
28	539.18	37.68	8.54	501.50	46.22	1.6031	0.4100	2.0131
7th Year		147.22	37.65		184.88			
29	501.50	38.27	7.94	463.23	46.22			
30	463.23	38.88	7.34	424.35	46.22			
31	424.35	39.50	6.72	384.85	46.22			
32	384.85	40.12	6.10	344.73	46.22	1.7071	0.3060	2.0131
8th Year		156.78	28.10		184.88			
33	344.73	40.76	5.46	303.97	46.22			
34	303.97	41.40	4.82	262.57	46.22			
35	262.57	42.06	4.16	220.51	46.22			
36	220.51	42.73	3.49	177.78	46.22	1.8179	0.1952	2.0131
9th Year		166.95	17.93		184.88			
37	177.78	43.40	2.82	134.38	46.22			
38	134.38	44.09	2.13	90.29	46.22			
39	90.29	44.79	1.43	45.50	46.22			
40	45.50	45.50	0.72	(0.00)	46.22	1.9359	0.0773	2.0131
10th Year		177.78	7.10		184.88			

