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No. NEPRA/TRF-358/NPPMCL-2016/5888-5890
February 19, 2020

Subject: **Decision of the Authority in the matter of Tariff Adjustments at Commercial Operation Date (COD) of National Power Parks Management Company (Private) Limited (NPPMCL), 1230.54 MW Haveli Bahadar Shah (Case No. NEPRA/TRF-358/NPPMCL-2016)**

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Annex-I, II, III & IV (30 pages) in Case No. NEPRA/TRF-358/NPPMCL-2016.

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.

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

Enclosure: As above


(Syed Safer Hussain)

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

CC:

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

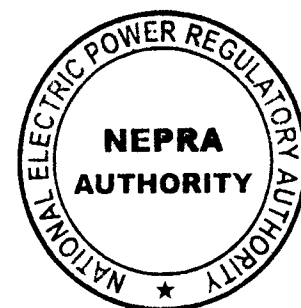


DECISION OF THE AUTHORITY IN THE MATTER OF TARIFF ADJUSTMENTS AT COMMERCIAL OPERATION DATE (COD) OF NATIONAL POWER PARKS MANAGEMENT COMPANY (PVT) LTD (NPPMCL), 1230.54 M- HAVELI BAHADAR SHAH

1. Introduction

- 1.1. National Power Parks Management Company (Private) Limited (hereinafter "NPPMCL"), the petitioner is a private limited company incorporated under the laws of Pakistan, wholly owned by the Government of Pakistan GOP, which has setup a Re-gasified Liquefied Natural Gas (hereinafter "RLNG") based Combined Cycle Power Plant in Pakistan namely 1,230.54 MW Power Plant Haveli Bahadur Shah, District Jhang (the "Project" or "HBS Project"). NPPMCL filed an application for issuance of generation license on April 21, 2016 which was granted by the Authority vide its determination dated September 29, 2016 through generation license No. IGSPL/70/2016.
- 1.2. Pursuant to the relevant provisions of the NEPRA Act and the Rules and Regulations made there-under; NPPMCL filed Tariff Petition for approval of the reference generation tariff vide its letter dated April 22, 2016. The petition was processed in accordance with provisions of applicable law i.e. NEPRA Act and Tariff (Standards & Procedure) Rules - 1998. Having considered the submissions of the Petitioner, comments of stakeholders, determination in the matter was issued on August 09, 2016 wherein, the Authority determined a cost-plus levelized tariff of Rs.6.4202/kWh, US Cents 6.1145/kWh for RLNG and Rs. 10.0829/kWh and US Cents 9.6027/kWh for HSD.
- 1.3. The summary of project cost and tariff allowed to NPPMCL in tariff determination is as under:

Description	Million US\$
EPC Cost:	
Offshore EPC Cost	471.057
Onshore EPC Cost	118.393
Items not covered in the EPC contract scope:	21.601
Combustion Monitoring System	0.500
BOP Spares	1.714
Site Housing Complex with recreational facilities.	11.738
Fuel Gas Treatment Plant	2.100
Buffer Vessel	4.463
Acquisition of Land (Site housing complex)	1.086
Non EPC Cost	54.355
Engineering consultancy	9.770
O&M mobilization	6.000
Land Cost (Power complex)	2.530

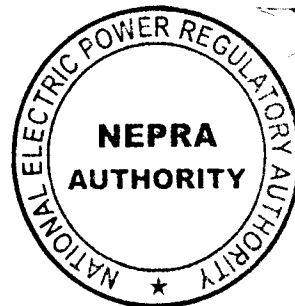




Insurance during construction	6.111
Security Surveillance	10.000
Administrative Expenses during construction	8.900
Testing & Commissioning	11.044
Custom Duties & Cess	28.499
LTSA Initial Spare Parts	20.880
Gas Pipeline Cost	28.000
One month LNG Escrow Account	36.844
CAPEX	779.629
Financing Fees & Charges	19.101
Interest During Construction	55.044
Total Project Cost	853.774

- 1.4. The Authority determined and approved the following tariff and adjustments/indexations for National Power Parks Management Company Limited (NPPMCL) its 1230.54 MW Power Plant on imported RLNG/HSD for delivery of electricity to the power purchaser:

Tariff Component	Reference		Indexation
	RLNG	HSD	
Energy Charge (Rs./kWh)			
Fuel cost component	4.4483	7.9715	Fuel price
Variable O&M	0.3146	0.4540	US CPI & Rs./US\$
Total	4.7629	8.4255	
Fixed O&M (Local)	0.0616	0.0616	CPI (General)
Fixed O&M (Foreign)	0.1369	0.1369	US CPI & Rs./US\$
Cost of working capital	0.0954	0.0965	KIBOR and fuel price
Insurance	0.0606	0.0606	Actual subject to maximum limit
Return on Equity	0.5710	0.5710	Rs./US\$
Debt servicing (1-10 Yrs)	0.9193	0.9193	KIBOR
Total Capacity Charges 1-10 years	1.8448	1.8448	
Total Capacity Charges 11-30 years	0.9255	0.9255	
Levelized capacity (Rs./kW/h)	1.5247	1.5247	
Levelized capacity @ 92% (Rs./kW/h)	1.6573	1.6573	
Levelized tariff (Rs./kWh)	6.4202	10.0829	
Levelized tariff (Cents/kWh)	6.1145	9.6027	



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Tariff on Single Cycle (RLNG only)

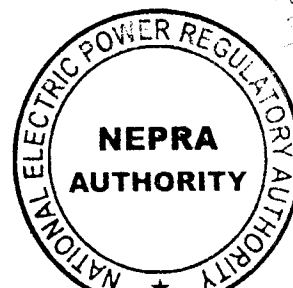
Description	Rs./kWh	Adjustment /Indexation
Fuel cost component	6.7810	Fuel price
Variable O&M (Foreign)	0.3146	US CPI & Rs./US\$
Fixed O&M (Local)	0.0616	CPI General
Fixed O&M (Foreign)	0.1369	US CPI & Rs./US\$
Cost of working capital	0.0954	KIBOR and fuel price
Total	7.3895	

- 1.5. Thereafter, NPPMCL filed a petition to the Authority on May 24, 2019 for modification of the generation tariff. Decision in the matter was issued on November 18, 2019 wherein the Authority determined a levelized tariff of Rs.6.4202/kWh, US Cents 6.1145/kWh for RLNG and Rs. 10.3394/kWh and US Cents 9.8470/kWh for HSD subject to applicable adjustments/indexations. The summary of modified tariff is as under:

Tariff on Combined Cycle

Tariff Component	Indexation		
	RLNG	HSD	
Energy Charge (Rs./kWh)			
Fuel cost component	4.4483	7.9715	Fuel price
Variable O&M	0.3146	0.4540	US CPI & Rs./US\$
Total	4.7629	8.4255	
Fixed O&M (Local)	0.0616	0.0711	CPI (General)
Fixed O&M (Foreign)	0.1369	0.1581	US CPI & Rs./US\$
Cost of working capital	0.0954	0.1101	KIBOR and fuel price
Insurance	0.0606	0.0700	Actual subject to maximum limit
Return on Equity	0.5710	0.6594	Rs./US\$
Debt servicing (1-10 Yrs)	0.9193	1.0616	KIBOR
Total Capacity Charges 1-10 years	1.8448	2.1304	
Total Capacity Charges 11-30 years	0.9255	1.0687	
Levelized capacity (Rs./kW/h)	1.5247	1.7607	
Levelized capacity @ 92% (Rs./kW/h)	1.6573	1.9138	
Levelized tariff (Rs./kWh)	6.4202	10.3394	
Levelized tariff (Cents/kWh)	6.1145	9.8470	

- 1.6. Being aggrieved with the above decision, NPPMCL filed a motion for leave for review in pursuance to Rule 16(6) of NEPRA Tariff (Standards & Procedure) Rules, 1998, on November 29, 2019. Decision in the matter was issued on February 12, 2020.





One Time Adjustments of Project Cost at Commercial Operations Date (COD):

1.7. Following one-time adjustments were provided by the Authority in the reference tariff's determination of NPPMCL dated August 09, 2016, November 18, 2019 and February 12, 2020:

- i) Adjustment of EPC Cost
- ii) Adjustment for items outside the scope of the EPC Cost.
- iii) Adjustment of Non-EPC Cost items.
- iv) Adjustment for Customs Duties and Cess.
- v) LTSA Initial Spares Parts
- vi) Adjustment for gas pipeline cost.
- vii) Adjustment of Escrow Account on the basis of revised RLNG price and applicable GST.
- viii) Adjustment for Financing Fees & Charges.
- ix) Adjustment for Interest during construction.
- x) Adjustment of O&M components.

1.8. NPPMCL attained its commercial operations date (COD) with effect from May 09, 2018. As per the determination, NPPMCL submitted its request for adjustment of relevant components of its generation tariff vide letter dated December 10, 2019. In support of its claim, NPPMCL also submitted the documentary evidence.

2. Details of one-time adjustment is as under:

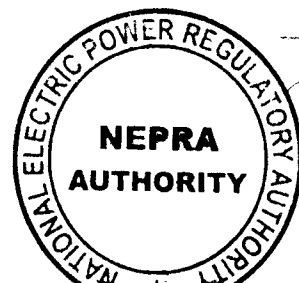
2.1. **EPC Cost**

2.1.1. NPPMCL was allowed an EPC Cost of USD 589.450 million (i.e Offshore EPC Cost of USD 471.057 million and Onshore Cost of USD 118.393 million).

2.1.2. The relevant provisions of Paragraph 27(II) of the Order dated August 9, 2016 and 9(II) of the decision dated November 18, 2019 stated;

"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 US\$ 471.057 million of the EPC portion of payment in the foreign currency shall be made against the reference exchange rate of Rs. 105/US\$ on the basis of actual payment. The adjustment shall be made only for the currency fluctuation against the reference parity values.

2.1.3. NPPMCL vide its COD request has claimed same amount of EPC Cost as earlier allowed by the Authority which is USD 589.450 million (i.e Offshore and Onshore EPC Cost of USD 471.057 million and Onshore Cost of USD 118.393 million respectively).



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2.1.4. NPPMCL submitted that it entered into an EPC Agreement Power Construction Corporation of China and Qavi Engineers (Pvt) Ltd., for the construction of 1230.540 MW Haveli Bahadar Shah Project, details of which are as reproduced below:

Contract	Contractor	Origin	Contract Price (US\$ Mln)	Contract Date
Offshore	Power Construction Corporation of China	China	471.057	October 13, 2015
Onshore	Power Construction Corporation of China and Qavi Engineers (Pvt) Ltd	China	118.393	October 13, 2015
Total			589.450	

2.1.5. As per information provided by NPPMCL, the EPC cost included power generation sets together with all the necessary auxiliary machinery, equipment and systems and includes the erection, testing, commissioning and completion of the equipment and construction of facility. EPC Offshore scope included Supply of equipment i.e. Gas Turbines made by GE, Steam Turbines Alstom, Boilers, Electric Equipment's, SCADA System and all other obligations to be performed by the Supplier outside Pakistan. Scope of EPC Onshore included Civil works, Construction etc.

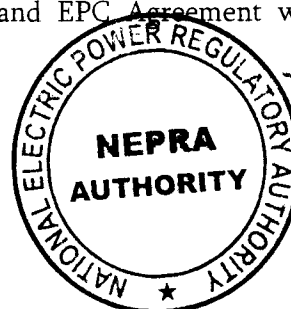
2.1.6. As per Para VIII 'Terms & Conditions' point (xii) of the determination dated August 09, 2016, the construction period was allowed as 27 months. NPPMCL issued "Notice to Proceed" on October 13, 2015 to the EPC Contractor. The Project achieved Financial Close on November 28, 2016. Actual COD was achieved on May 09, 2018 having a delay of 117 days as against the RCOD of January 13, 2018.

2.1.7. NPPMCL requested to allow US\$ 589.450 million (Rs. 66,287.45 million) on account of currency / exchange rate fluctuation during the construction period. The breakup provided by NPPMCL of EPC cost is as under:

Description	Reference		Claimed	
	Gross/Total	Gross/Total	Gross/Total	Gross/Total
	USD in M	PKR in M	USD in M	PKR in M
EPC Cost-Offshore	471.057	49,460.985	471.057	54,246.90
EPC Cost-Onshore	118.393	12,040.55	118.393	12,040.55
Total	589.450	61,501.553	589.450	66,287.450

2.1.8. As per determination, out of the total EPC cost of USD 589.450 million, only the offshore portion of the cost was entitled to adjustment of US\$/PKR parity variations. NPPMCL submitted a claim of US\$ 471.057 million (Rs. 54,246.90 million @ Rs.115.16/US\$) wherein the exchange rate of the COD adjustment filing date (i.e Rs. 155.70/US\$) was used for conversion of payables.

2.1.9. As for the onshore portion, NPPMCL submitted that it had locked the Onshore EPC Price at Rs.101.70/\$ at the time of signing of PPA and EPC Agreement with the EPC



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Contractor. NPPMCL in support of its claim submitted relevant documentary evidences such as copies of EPC contracts, commercial invoices, milestones completion certificate, interim payments certificates, bank statements etc.

2.1.10. Upon scrutiny of the documents it was observed that NPPMCL has paid US\$ 526.98 million or Rs. 55,262.42 million to the EPC contractors till COD i.e. May 09, 2018. The remaining amount of US\$ 61.266 million (offshore US\$ 52.71 million and onshore US\$ 8.55 million) was required to be paid. NPPMCL requested the Authority to allow remaining payable cost of US\$ 61.226 million at the exchange rate of PKR 155.70/US\$ for offshore contract price.

2.1.11. The comparison of reference, claimed and verified EPC cost is as under:

Description	Reference		Claimed		Verified					
	Gross/Total	Gross/Total	Gross/Total	Exch. Rate	Paid		Payable		Paid + Payable	
	USD in M	PKR in M	USD in M	PKR in M	USD in M	PKR in M	USD in M	PKR in M	USD in M	PKR in M
EPC Cost-Offshore	471.057	49,460.985	471.05	54,246.90	417.14	44,091.81	52.71	5,829.95	469.85	49,921.76
EPC Cost-Onshore	118.393	12,040.55	118.39	12,040.55	109.83	11,170.60	8.554	869.96	118.39	12,040.56
Total	589.450	61,501.55	589.450	66,287.450	526.984	55,262.42	61.26	6,699.91	588.25	61,962.33

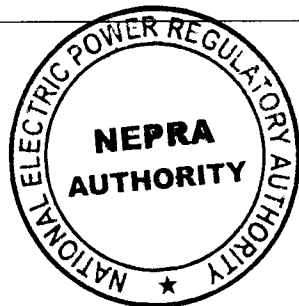
2.1.12. NPPMCL was required to achieve COD on January 13, 2018 whereas actual COD was achieved in May 09, 2018 with delay of almost 4 months. NPPMCL further delayed its COD tariff adjustment request by filing in December 2019 after a time period of 17 months, overall delay is almost 2 years. The Authority considers that the request of NPPMCL to adjust post COD payable amounts at prevailing exchange rate as claimed by the Petitioner is not justified.

2.1.13. In view of above, the Authority considers it appropriate to allow the remaining payable amount of US\$ 52.71 million @ 110.60/US\$ prevailing at RCOD and onshore US\$ 8.55 million @ 101.70/US\$.

2.1.14. During scrutiny of the documents relating to payment of EPC Offshore contract, it was found out that US\$ 1.2 million was overstated against the settlement of retention money. Therefore, the same has not been considered.

2.1.15. Accordingly the overall amount on account of exchange rate variation in EPC offshore till RCOD works out as Rs. 49,921.76 @ weighted average rate of Rs. 106.25/US\$. The Authority therefore decided to allow an amount of US\$ 588.25 Million (Rs. 61,962.33 million) on account of EPC cost which is as under:

Description	Contractor	Allowed	
		USD in M	PKR in M
EPC Cost-Offshore	Power Construction Corporation of China	469.85	49,921.76
EPC Cost-Onshore	Power Construction Corporation of China and Qavi Engineers (Pvt) Ltd	118.39	12,040.56
Total		588.25	61,962.33





2.2. **Items not covered in the EPC Agreement Scope:**

- 2.2.1. NPPMCL was allowed USD 21.601 million as cost of Items not covered in the EPC Agreement Scope. In modified decision dated November 18, 2019, provisional amount of US\$ 4.212 million on account of BOP spares was allowed subject to adjustment at the time of COD as per actual.
- 2.2.2. During review of the submitted documents, it was noted that only the cost related to Site Housing, BOP spares and Land Cost was claimed by NPPMCL totaling USD 18.476 million out of which USD 16.774 million is still payable on part of the company. Breakup of the cost is as under:

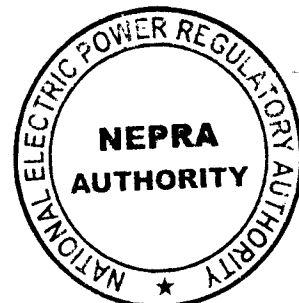
Sr. #	Description	Determined US\$ Million	Modified US\$ Million	Claimed US\$ Million	Paid US\$ Million	Payable US\$ Million	Verified US\$ Million
1	Combustion Monitoring System of Gas Turbine	0.500	0.500	-	-	-	-
2	Buffer Vessel	4.463	4.463	-	-	-	-
3	Site Housing Complex	11.738	11.738	12.550	0.886	11.664	12.550
4	BOP Spares	1.714	5.926	5.926	0.818	5.109	5.926
5	Land Cost	1.086	1.086	-	-	-	-
6	Fuel Gas Treatment Plant	2.100	2.100	-	-	-	-
	Total	21.601	25.813	18.476	1.704	16.773	18.476

2.2.3. The Petitioner claimed the cost of land for US\$ 1.086 million along with the cost of Site Housing Complex. Further submitted that the Site Housing colony for the employees is in progress and will be completed in two years. NPPMCL further submitted that the contractual arrangements for provision of spares has been made with the EPC contractor. In support of its claim NPPMCL submitted the contracts in the matter.

2.2.4. Having considered the submissions of the NPPMCL, the Authority decided to provisionally allow the payable cost of US\$ 16.773 million on account of Site Housing and BOP Spares. In case the Petitioner fails to complete Site Housing Complex within 2 years from COD of the complex, a penalty shall be applicable on the basis of KIBOR + 3% per annum of the cost allowed on account of Site Housing Colony. Further, the payable cost of BOP spares shall also be adjusted along with the adjustment of Site Housing Colony. However, no exchange rate variation will be allowed in BOP spares. Accordingly amount of USD 18.476 million as cost of "Items not covered in the EPC Agreement Scope" is allowed.

2.3. **Non-EPC cost:**

2.3.1. The Authority allowed USD 54.355 million as 'Non-EPC Cost, including engineering consultancy, Administrative Expenses during construction, O & M mobilization & training, land cost, Security Surveillance, insurance during construction @ 1% of total EPC cost, testing & commissioning cost.



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2.3.2. In accordance with prescribed one-time adjustments, only the cost of O & M mobilization & training of USD 6.0 million, Security Surveillance cost of USD 10.0 million and Administrative Cost of USD 8.90 million was required to be adjusted as per actual at COD. As per the review motion decision dated February 12, 2020, the component of Testing & Commissioning was also to be adjusted as per actual subject to maximum limit of US\$ 10.129 million at the time of COD.

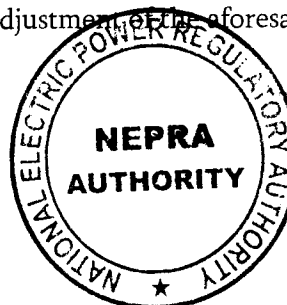
2.3.3. NPPMCL submitted a claim of USD 52.397 million as 'Non-EPC Cost. The cost breakup of these items are as under:

Description	Determined US\$ Million	Claimed US\$ Million	Paid US\$ Million	Payable US\$ Million	Verified US\$ Million
Engineering consultancy	9.770	9.770	8.169	0.760	8.929
Administrative Expenses	8.900	3.951	3.967		3.967
O&M mobilization & training	6.000	3.060	3.060		3.060
Land Cost	2.530	2.765	2.600	0.147	2.747
Security Surveillance	10.000	9.042	-	10.00	10.00
Insurance during construction	6.111	6.080	4.231	-	4.231
Testing & Commissioning	11.044	17.729	10.129	-	10.129
Total	54.355	52.397	32.156	10.907	43.063

2.3.4. NPPMCL submitted an addendum to the COD adjustment request on January 14, 2020 and submitted that the overall amount for Engineering Consultancy of US\$ 9.770 to be allowed instead of actual amount of US\$ 8.929 million, as it was not required to be adjusted at the time of COD. Under the head of Security Surveillance, NPPMCL claimed Rs.1,407.91 million which stands payable to date. In addition to that under the head of Insurance During Construction, it has claimed at maximum 1% of the EPC regardless of actual amount expenditure.

2.3.5. The Authority considered the request of NPPMCL regarding non adjustment of expenditures on actual for engineering consultancy and insurance during construction. The generation tariff determined for NPPMCL is on cost plus basis wherein the defined parameters and terms and conditions have been laid down in the original decision. The Authority considers that the request of NPPMCL regarding allowing the aforesaid cost on reference amount is not justified.

2.3.6. Hence the Authority while declining the request of NPPMCL decided to allow Non-EPC cost of USD 43.063 million @ Rs. 105.050/US\$ including the payable amount of US\$ 10.907 million. However, all the payable amounts i.e. engineering consultancy, security and surveillance, land cost are subject to adjustment along with the adjustment of site housing colony as per Order para (6) of the Decision dated February 12, 2020. No exchange rate variation will be allowed at the time of adjustment of the aforesaid costs.



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2.4. Customs, Duties and Cess:

- 2.4.1. The Authority allowed US\$ 28.499 million as Customs, Duties and Cess. It was also provided that Customs, Duties and Cess of US\$ 28.499 million shall be adjusted as per actual at COD.
- 2.4.2. NPPMCL submitted a claim of US\$ 23.454 million (Rs.2,482.64 million) as cost of Custom Duty and Cess paid on import of plant machinery and also provided documents for verification, which included Goods Declaration, Bill of Lading, Packaging List, Challan Cess and etc.
- 2.4.3. The Authority considering the above claim of NPPMCL decided to allow the verified amount of Rs. 2,482.64 million (US\$ 23.644 million @ Rs. 105/US\$) as Custom Duties and Cess.

2.5. LTSA initial spares inventory:

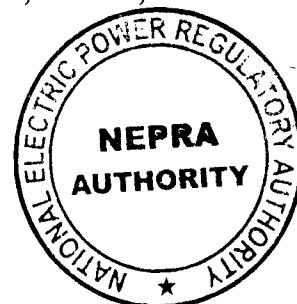
- 2.5.1. The Authority allowed US\$ 20.880 million as cost of LTSA initial spares parts.
- 2.5.2. NPPMCL claimed an amount of US\$ 20.863 million on this account and submitted supporting documents including contract with GE, and sales tax invoices for verification.
- 2.5.3. The Authority considering the above claim of NPPMCL decided to allow the verified amount of Rs. 2,307.33 million (US\$ 20.861 million @ Rs. 110.60/US\$) as cost of LTSA initial spares parts.

2.6. Gas Pipeline Cost:

- 2.6.1. The Authority allowed Gas Pipeline cost of US\$ 28.0 million subject to adjustment as per actual at COD.
- 2.6.2. NPPMCL has claimed an amount of Rs.2,368.0 million (US\$ 21.838 million) at an exchange rate of Rs. 108.43/US\$. In response to the direction of the Authority, the Petitioner submitted audited report carried out by EY Ford Rhodes, a firm of chartered accountants, Lahore dated January 24, 2020 indicating the cost incurred for the construction of pipeline for the period July 01, 2016 to June 30, 2019. As per the submitted statement an amount of Rs.1,594.10 million was verified as paid, therefore the claim of Rs.2,368.0 million by the petitioner is not justified.
- 2.6.3. The Authority considering the above claim of NPPMCL and the report of auditor, decided to allow the verified amount of Rs. 1,594.10 million (US\$ 15.182 million @ Rs. 105/US\$) as cost of Gas Pipeline.

2.7. One month LNG Escrow Account:

- 2.7.1. The Authority in its determination allowed US\$ 36.844 million (Rs. 3,868.620 million) as cost of One month LNG Escrow Account which was subject to adjustment on the basis of revised RLNG price and applicable GST at COD.



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2.7.2. NPPMCL submitted that out of the total claim of Rs. 7,692.92 million, Rs. 5,691.31 million has been paid at exchange rate USD/PKR 115.70, however an amount of Rs. 2,003.61 million is still payable.

2.7.3. The Authority while considering the above claim of NPPMCL decided to allow the amount of Rs. 7,692.92 million (USD 66.507 million @ Rs. 115.70/US\$) as One month LNG Escrow Account, subject to verification of payable amount along with the adjustment of Site Housing Colony as per Order para (6) of the Decision dated February 12, 2020.

2.8. **Financing Fees & Charges:**

2.8.1. The Authority allowed a cost of US\$ 19.101 million as Financing Fees & Charges (which was 3.5% of the debt). The allowed cost was subject to adjustment as per actual subject to the maximum limit of 3.5% of the approved debt.

2.8.2. NPPMCL submitted an amount of Rs.339.002 million exclusive of FED/Sales tax at an exchange rate of Rs 110.10/USD on account of financing fees & charges as per table given below:

No	Description	Amount (US\$)	Rate	Amount (Rs)
1	Fee	1,525,211	115.3	175,906,000
2	LC Commission	1,532,572	105.7	161,919,271
3	Bank guarantee charges	11,172	104.8	1,170,644
4	Submission charges	56	121.5	6,788
	Total financing fee	3,069,011	110.1	339,002,703

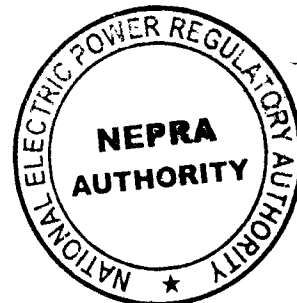
2.8.3. In support of its claim, NPPMCL submitted documentary evidence i.e. Bank Statements, Debit Advices, Letter of Credit etc. NPPMCL also stated that regardless of the less expenditure of the company under this head, it requested the Authority to allow them complete 3.5% of the debt as Financing Fees & Charges which amounts to US\$ 20.685 million.

2.8.4. The Authority considering the above claim of NPPMCL decided to allow the actual verified amount of Rs. 339.002 million (US\$ 3.229 million @ Rs. 105/US\$) as Financing Fees & Charges.

2.9. **Interest during Construction:**

2.9.1. The Authority allowed US\$ 55.044 million for Interest During Construction. It was also provided that;

"The IDC shall be re-established at the time of COD on the basis of applicable KIBOR, actual premium, actual loan and actual loan drawdown"



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- 2.9.2. NPPMCL submitted that the Project has been financed through seed money from GOP / Ministry of Water and Power (MoWP now Ministry of Energy MoE) amounting to PKR 1.25 Billion and Public Sector Development Program (PSDP) fund disbursed as Cash Development Loan (CDL) amounting to PKR 53.08 Billion which was later converted to GoP equity on June 30, 2017 and acquired by Pakistan Development Fund Limited (PDFL). PDFL provided an amount of PKR 15.8 Billion and PKR 2.5 Billion as a loan on August 31, 2017 and May 25, 2018 respectively. In support of its claim, NPPMCL has submitted copy of financial agreement, copies of bank Statements reflecting actual drawdowns of debt along with bank debit advices evidencing the amount of interest charged by the PDFL and MoF.
- 2.9.3. The documents submitted by NPPMCL have been scrutinized and it was observed that Company has earned interest income on TDR, NIIDA Account and Head Office Account during construction period. The Authority considers that this amount needs to be adjusted / deducted in the IDC.
- 2.9.4. NPPMCL issued notice to proceed to EPC contractors on October 13, 2015 which is the start date of construction. The Authority allowed total construction period of 27 months whereas NPPMCL claimed IDC on the basis of actual construction period of 30 months and 27 days. The Authority considers that request of NPPMCL is not justified. Hence the IDC has been calculated on the basis of the allowed construction period of 27 months. The comparison of determined, claimed and allowed IDC is as under:

Determined			Claimed			Allowed		
Gross/Total	Exch. Rate	Total	Paid			Gross/Total	Exch. Rate	Total
USD in M	PKR / USD	PKR in M	USD in M	PKR / USD	PKR in M	USD in M	PKR / USD	PKR in M
55.044	105.00	5,779.620	29.930	113.79	3,405.810	29.005	105.00	3,045.530

- 2.9.5. As against the claimed amount of Rs. 3,405.810 million, the adjusted amount on account of interest and 40% savings in spread of drawdown (PDFL loan), the IDC has been re-established as Rs. 3,045.530 million (US\$ 29.005 million) at the exchange rate of Rs.105/US\$ and the same has been allowed.

2.10. **Sales Tax:**

- 2.10.1. NPPMCL has claimed sales tax of Rs. 2,730.105 million (US\$ 24.171million) at the COD stage and has provided the following break up of its claim:

Sales Tax	Amount (US\$ Mln)	Amount (Rs.Mln)
Adjustable – Sales Tax	22.379	2,547.841
Non-Adjustable – Sales Tax	1.792	182.263
Total Sales Tax	24.171	2,730.104





2.10.2. In support of sales tax claim, NPPMCL submitted an opinion from Yousaf Saeed & Company Chartered Accountants, a member firm of the Alliance of Independent firms dated January 28, 2020 which confirmed the sales tax to the extent of non-adjustable for Rs. 182.263 million and being final liability of the Petitioner.

2.10.3. In view of the report of the auditor, out of the total sales tax amount of US\$ 24.171 million, US\$ 22.379 million is adjustable tax while the remaining US\$ 1.792 million is un-adjustable sales tax. The Authority considers that the request of NPPMCL regarding adjustment of total claimed sales tax amount is not justified and therefore same is declined. Therefore, the Authority decided to allow the non-adjustable sales tax of US\$ 1.792 million (Rs.182.263 million).

3. Revised Project Cost

Concluding the discussion made in the above paras, the revised approved project cost of NPPMCL-HBS after incorporating one-time adjustments at COD is as under:

BREAKUP OF PROJECT COST	*****US\$ in millions*****	
	Reference	Assessed
Offshore EPC Cost	471.057	469.856
Onshore EPC Cost	118.393	118.393
EPC cost:	589.450	588.250
Combustion Monitoring System of Gas Turbines	0.500	-
Buffer Vessel	4.463	-
Site Housing Complex with Additional Recreational Facilities	11.738	12.550
BOP Spares	5.926	5.926
Acquisition of Land	1.086	-
Fuel Gas treatment plant	2.100	-
Items not covered in the EPC contract scope:	25.813	15.018
Engineering and related consultancy	9.770	8.929
Administrative Expenses	8.900	3.967
O&M mobilization & training	6.000	3.060
Land Cost	2.530	2.747
Security Surveillance	10.000	10.000
Insurance during construction	6.111	4.231
Testing & Commissioning	11.044	10.129
Non EPC Cost:	54.355	43.063
Customs Duties & C	28.499	23.644





LTSA Initial Spare Parts	20.880	20.861
Gas Pipeline Cost	28.000	15.182
One month LNG Escrow Account	36.844	66.507
Less Sales Tax (Adjustable)	-	(24.265)
CAPEX	783.841	751.718
Financing Fees & Charges 3.5% of Debt	20.880	3.229
Interest During Construction 27 Months	28.000	29.005
Total Project Cost	857.986	783.951

Reference Values:

Rupee-Dollar Parity	Rs. 106.35/USD
US CPI (All Urban Consumers) March,2018	249.55
Local CPI (General) March,2018	220.25
Local Financing	3 Months KIBOR (6.50%) plus 1.80% (Including 40% saving in spread)
Debt: Equity Ratio	70 : 30

4. Tariff Components

The operation cost / tariff components were subject to the following adjustments / indexation as per Authority's determination:

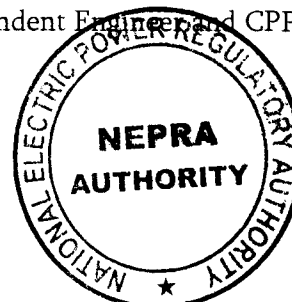
Component	Adjustment
Energy Part:	
Fuel cost Component	Fuel Price
Variable O&M (Foreign)	US CPI & Rs./US\$
Capacity Part:	
Fixed O&M (Local)	CPI General (quarterly)
Fixed O&M (Foreign)	US CPI & US\$/PKR (quarterly)
Cost of working capital	KIBOR & Fuel Price
Insurance	Annually adjustment upto 1% of EPC Cost
ROE	US\$ /PKR (quarterly)
Debt Service	KIBOR

4.1. Fuel Cost Component:

4.1.1. The fuel cost component was determined based on the reference efficiency of 62.45% for RLNG and 54.05% for HSD. The allowed efficiency was subject to adjustment at the time of COD. It was provided in the Authority's determination as follows:

"In case the efficiencies on either fuel establish lower than the guaranteed levels, appropriate adjustment in the fuel cost components shall be made after adjusting LDs as per Schedule 10 to the EPC contract against the project cost."

4.1.2. NPPMCL submitted that the Heat Rate Test, conducted in accordance with the above said testing procedures and witnessed by the Independent Engineer and CPPA, resulted





in a combined cycle efficiency of 62.185% on RLNG fuel (“RLNG Tested Efficiency”). After adjusting/excluding the same with degradation curve / factor for the number of fired hours, as narrated above, the corrected combined cycle efficiency was established as 62.75% which was higher than the EPC Contractors’ guaranteed value of 62.445%, hence, LD was not applicable on the EPC Contractor in terms of the EPC Contract. Copy of certificate of Independent Engineer regarding net heat rate test along with relevant portions of test report for said test on RLNG have been submitted accordingly.

4.1.3. Similarly, the combined cycle efficiency on HSD fuel was established as 56.191% (“HSD Tested Efficiency”) and after adjusting the same with degradation curve/factor for the number of fired hours the corrected combined cycle efficiency was established as 56.67% which was higher than the EPC Contractors’ guaranteed value of 54.05%. Copy of certificate of Independent Engineer regarding net heat rate test along with relevant portions of test report for said test on HSD has also been submitted accordingly.

4.1.4. NPPMCL submitted that as per section 19.6 of the Order of the Authority determination dated August 09, 2016;

“...In case the efficiencies on either fuel establish higher than the guaranteed levels, the gain shall be shared in the ratio of 60:40 between the power purchaser and power producer and fuel cost components shall be adjusted accordingly.”

4.1.5. NPPMCL further stated that since the HSD Tested Efficiency (56.191%) is higher than the guaranteed efficiency 54.05%), revised efficiency after incorporating the savings in the ratio of 60:40 works out to be 55.334% (54.05% + 60.0% * (56.191% - 54.05%)).

4.1.6. NPPMCL referred the provisions of Clause 8.70 of the Modification Order dated November 18, 2019 and requested for the following adjustments/corrections (provided in Table below) as allowed to UCH II Power Project:

CORRECTION/ADJUSTMENTS

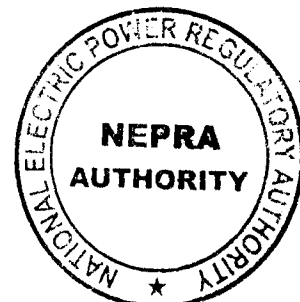
No	Description	Percentage
1	Recoverable and non-recoverable adjustments	0.508%
2	Blow down adjustment	0.18%
3	Misc. adjustment	0.10%
4	Temperature adjustment	0.11%
	Total Adjustment	0.898%

4.1.7. NPPMCL subsequently vide letter dated February 14, 2020 requested to allow efficiency of 61.287% (62.185% - 0.898%) on RLNG (“RLNG Applicable Efficiency”) and 54.436% (55.334% - 0.898%) on HSD (“HSD Applicable Efficiency”). The fuel cost components in the Petition have been calculated at the applicable respective efficiencies determined above i.e. 61.287% for RLNG and 54.436% for HSD.





- 4.1.8. NPPMCL had proposed a mechanism whereby the tested efficiency numbers have been adjusted to verify whether LDs are applicable. While for working out the sharing of gain, in case levels are established more than the EPC guaranteed numbers, the test numbers have been used by comparing those with EPC guaranteed values.
- 4.1.9. The Authority agrees with the mechanism used by the Petitioner for verifying applicability of LDs. However it is considered that for working out any gains, the basis need to be consistent and reflect same time frames. Under the proposed approach by the Petitioner, the test numbers and the EPC guaranteed numbers do not represent same time frame. The Authority therefore has allowed efficiency numbers after taking into consideration appropriate factors in the working.
- 4.1.10. The Petitioner has also claimed that further corrections/adjustments in the efficiency numbers may be allowed to it on same lines as allowed by the Authority to UCH-II power plant. The Petitioner did not provide any further working or evidence to substantiate its claim. The Petitioner also requested these corrections in its earlier petitions for reference tariff and modification of tariff. The Authority in its decision (section 8.7) on the petition for modification of tariff has observed as follows;
"Keeping in view the above, the Authority has decided to consider the request of the Petitioner at COD stage tariff adjustment."
- 4.1.11. The Petitioner has claimed the following adjustments;
- | | |
|---|--------|
| Recoverable and non-recoverable adjustments | 0.508% |
| Blow down adjustment | 0.18% |
| Miscellaneous Adjustment | 0.10% |
| Temperature Adjustment | 0.11% |
| TOTAL | 0.898% |
- 4.1.12. The matter was discussed with the Petitioner's representatives and it was observed that Recoverable and non-recoverable adjustment, and temperature adjustment are already allowed to the petitioner and they requested that adjustments on these accounts be allowed to compensate them as they will receive such adjustments at the end of year whereas they require periodic adjustments during the year. The Petitioner was also unable to provide further details about miscellaneous adjustment.
- 4.1.13. The Authority is of the considered opinion that the request of the petitioner on these factors cannot be accepted. Adjustment on account of Blow down is a reasonable request however it is to be noted that the Petitioner has already been allowed a tariff which is linked with the EPC guaranteed value which normally has cushion of 2 to 2.5 % than the actual performance levels. For simple cycle operations the petitioner was allowed to claim its costs. Furthermore, efficiency gains have also been shared with the Petitioner whereas performance curves have also been allowed to it. The Authority therefore declines to allow above requested adjustments to the Petitioner.



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4.1.14. In view of the discussion in the preceding paragraphs the following Efficiency levels are allowed to the Petitioner:

Fuel	Requested Efficiency	Allowed Efficiency
RLNG	61.287%	62.185%
HSD	54.436%	55.34%

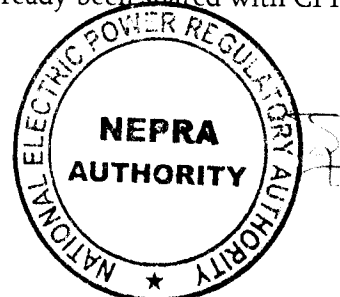
4.1.15. NEPRA vide its letter dated June 20, 2018 had determined the RLNG price for calculation of the fuel cost component applicable for the month of May 2018 under which the applicable price of RLNG is Rs. 1,249.9553/MMBTU (ex-GST). For HSD the applicable price of PKR 77.46 per liter has been used which is the net of GST price of HSD as announced by OGRA for the month of May 2018. The same have been used for calculation of the fuel cost component for the purpose of this Petition. The determined, claimed and revised fuel cost component is as under:

Description	Determined	Claimed	Allowed
	Rs./kWh	Rs./kWh	Rs./kWh
Fuel Cost Component (LNG)	4.5074	9.0046	7.5966
Fuel Cost Component (HSD)	8.0326	17.2405	14.0550

4.1.16. With respect to Output Degradation Factor, Heat Rate Degradation Factor and Part Load Adjustment Correction, the Authority in its determination dated November 19, 2018 stated that the respective issue would be considered at the time of COD based on correction curves of the complex specified by OEM on its letter head. On the basis of this observation, CPPA-G has informed NPPMCL, in a meeting, that it will not allow any of these factors and associated costs to NPPMCL for future invoices till the decision of the Authority.

4.1.17. NPPMCL has earlier submitted that these matters have been agreed with the Power Purchaser in PPA as per the industry norms. The PPA is executed after due diligence by both parties and is applicable. Furthermore, this standard PPA is approved by the ECC. In addition, the PPA has been submitted by the power purchaser to NEPRA for approval. In view thereof NPPMCL requested the Authority to allow above referred adjustment factors till approval of PPA.

4.1.18. Furthermore in response to the Authority decision of Nov 2019, whereby the Authority observed that adjustments need to be based on OEM curves - the petitioner has stated that OEM cannot provide the correction curves for the complex: rather the correction curves for the complex - entailing plant and machinery items can only be provided by the EPC contractor and that these curves had already been shared with CPPA-G.



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4.1.19. In view of the above, and the decision on Motion for Leave for Review filed by NPPMCL dated Feb 2020 the Authority agrees that curves provided by EPC Contractor are acceptable for the payments on account of Output Degradation Factor, Heat Rate degradation Factor and Part Load Adjustment correction. The curves provided by the EPC contractor shall be submitted to the Authority at the earliest. Furthermore CPPA-G is directed to continue to pay on account of the stated factors as per PPA which will be considered for approval by the Authority.

4.2. **O&M Component:**

4.2.1. The Authority allowed O&M cost component in the determination. As per Section II(xi) of the Order of the Authority:

“O&M component shall be adjusted as per the signed O&M agreement, LTSA agreement”.

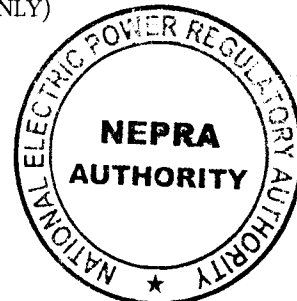
4.2.2. The Petitioner in its COD adjustment request submitted that it has followed a bidding process and has signed an O&M Contract with TNB Remaco. In support of its claim NPPMCL also provided the copy of the O&M contract. NPPMCL submitted that the O&M contract does not include in its scope of work costs related to Free Start-ups, Back-feed Power and recurring administration expenses during operations, which have been budgeted separately. Details of the O&M costs as provided by NPPMCL are as below:

O&M COST BREAK-UP

Description	Order			Actual		
	V O&M	F O&M	Total	V O&M	F O&M	Total
Long Term, Service Agreement (LTSA) Cost	7,419,048	6,960,000	14,379,048	6,395,731	6,000,000	12,395,731
O&M Operator Fee – Foreign	18,916,032	6,855,508	25,771,540	5,570,806	5,912,886	11,483,692
O&M Operator Fee – Local	-	1,209,795	1,209,795	-	-	-
Cost related to NOx Control SCR	2,575,839	-	2,575,839	n/a	n/a	n/a
Back Feed Power				-	1,422,405	1,422,405
Free Start Ups				-	1,801,227	1,801,227
Company's OH cost	-	5,000,000	5,000,000	-	5,000,000	5,000,000
Total	28,910,919	20,025,303	48,936,222	11,966,537	20,136,518	32,103,055

4.2.3. According to NPPMCL, all of the above costs other than corporate overheads are to be incurred in USD. NPPMCL claimed O&M tariff components are as under:

O&M COST COMPONENTS (FOR RLNG ONLY)





Tariff Components	Reference Tariff	Indexed Tariff at COD
Variable O&M (Foreign) (PKR/kWh)	0.1294	0.1592
Fixed O&M (Foreign) (PKR/kW/hour)	0.1185	0.1458
Fixed O&M (Local)	0.0818	0.0913
Indexation Values		
Local CPI	202.98	226.680
US CPI	237.11	251.989
Exchange Rate (PKR/USD)	105.00	121.60

*Adjusted for actual O&M agreement.

4.2.4. The Petitioner has indexed the O&M components of the Reference Tariff (adjusted for actual O&M agreement) based on indexation mechanism laid out in the Order. For the purpose of indexation, the indexation values for local CPI and US CPI have been taken for the month of March 2018 while exchange rate has been taken as of March 31, 2018 as against the reference local CPI, US CPI and exchange rate values for the month of February 2016.

4.2.5. The Authority considered the request of NPPMCL and decided to disallow cost on account of back feed power and free start-ups. Accordingly the verified Variable O&M (Foreign) Component @ Rs 0.1340/kWh, Fixed O&M (Foreign) @ Rs 0.1312/kWh and Fixed O&M (Local) @ Rs 0.0535/kWh is allowed to the Company. The summary of determined, claimed and approved O&M Components at COD are as under:

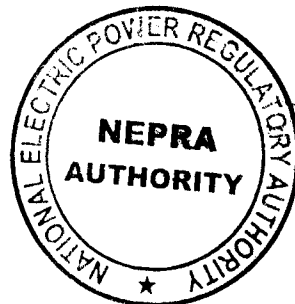
	Determined	Claimed	Allowed
Description	Rs./kWh	Rs./kWh	Rs.kWh
Variable O&M (F)	0.3146	0.1340	0.1340
Fixed O&M (F)	0.1369	0.1312	0.1312
Fixed O&M (L)	0.0616	0.0861	0.0535

4.3. **Insurance during operations component:**

4.3.1. The Authority had allowed Rs. 0.0606 per kWh as insurance tariff component to NPPMCL. NPPMCL requested to allow it insurance tariff component of Rs. 0.0965 per kWh at the COD stage. NPPMCL has claimed Rs. 1,027.179 million (1.59% of EPC cost) for insurance during operations for the period of 1yr (365 Days) i.e. May 09, 2018 to May 08, 2019. In support of its claim, NPPMCL has provided photocopies of Insurance policies and bank statements for payments.

4.3.2. The tariff determination at Para 22.2 specified that:

"The insurance cost component shall be adjusted annually on actual subject to maximum of 1% of the EPC cost and prevailing exchange rate on the first day of the insurance coverage period."



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4.3.3. The Petitioner's claim over and above the 1% of the EPC cost already declined by the Authority in the review for modification decision. According to the information submitted by NPPMCL, its insurance cost for the first year of its post COD operations works out to Rs. 645.26 million (US\$ 6.0673 million) based on 1% of the verified EPC cost. Accordingly insurance component of its tariff works out to Rs. 0.0606 per kWh and the same is allowed.

4.4. **Cost of Working Capital:**

4.4.1. The Authority had allowed Rs. 0.0954 per kWh as cost of working capital tariff component to NPPMCL. The relevant provision as per section VI (iv) of the Order is reproduced as under:

"At the time of COD, cost of working capital shall be adjusted for actual payment terms agreed in the PPA and GSA and fuel prices. Thereafter, the cost of working capital shall be adjusted quarterly for variation in KIBOR and fuel prices only."

4.4.2. NPPMCL claimed Rs. 0.1661/kWh for cost of working capital against determined Rs. 0.0954/kWh. The claimed amount has been calculated on the following parameters:

- a. Net RLNG price of PKR 1,249.9553/MMBTU on HHV basis and Net HSD price of USD 78.7/liter
- b. Payment cycle of 60 days
- c. 3-month KIBOR of 6.5% as applicable at March 31st, 2018;
- d. Spread of 2.0%
- e. SBLC Cost of 1.5% per annum
- f. Federal Sales tax rate of 17% on RLNG and 25.5% on HSD.

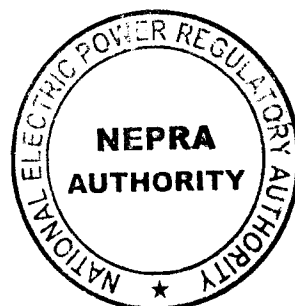
4.4.3. The actual facts and figures were verified and impact of cost of working capital has been revised on the basis of Fuel Cost Component, total net capacity, Rate of General Sales Tax, Exchange Rate and KIBOR variation. Accordingly the component for cost of working capital has been calculated as Rs.0.1604/kWh and the same has been allowed.

4.5. **Adjustment of Return on Equity.**

4.5.1. The Authority had allowed Rs. 0.5710 per kWh as return on equity (hereinafter referred to as "ROE") tariff component to NPPMCL in the determination according to which *"ROE component of tariff shall be adjusted for variation in actual equity investment and actual equity drawdown."*

4.5.2. NPPMCL has requested to allow its ROE component of Rs. 0.6129 per kWh on the basis of claimed equity of US\$ 252.66 million.

4.5.3. On the basis of revised equity of US\$ 235.185 million (30% of project cost) and exchange rate of US\$/PKR of Rs.106.35, the ROE component of tariff works out as Rs. 0.5279 per kWh and the same is allowed.





4.6. Debt Servicing Component

4.6.1. The Authority had assessed debt servicing component of Rs. 0.9193 per kWh on the basis of debt equity ratio of 70:30. As per the determination;

“The tariff has been determined on the basis of debt equity ratio of 70:30. 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.”

4.6.2. The Authority in its determination further decided that;

“The debt part of the project can also be financed through foreign financing or mix of local and foreign financing and the debt servicing component shall be adjusted accordingly.”

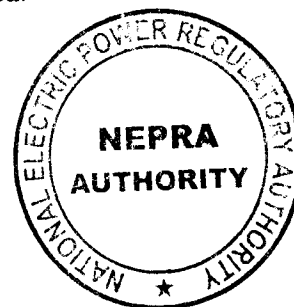
4.6.3. NPPMCL submitted that as per Authority’s determination interest calculated in the reference debt service schedule shall be subjected to adjustment for variation in quarterly-KIBOR in the case of local loan and quarterly LIBOR in the case of foreign loan on quarterly basis. The maximum allowed premium on LIBOR and KIBOR is 4.5% and 3% respectively and there will be no adjustment on the basis of actual higher premium than the maximum allowed limit. In case spread negotiated is less than the said limit, the saving will be shared in the ratio of 60:40 between power purchaser and the power producer respectively. Similarly the repayment of loan shall be considered from the first year of commercial operation. It was further mentioned that:

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

4.6.4. NPPMCL has submitted a claim of debt servicing component at Rs. 0.9815 per kW/h at the COD stage.

4.6.5. The petitioner negotiated loan arrangement from Pakistan Development Fund. The debt terms agreed on 3 month KIBOR Plus 1% for a term of 10 years. The Petitioner submitted that there has been saving in the spread allowed and negotiated about 0.80%. The reference Karachi Inter Bank Offer Rate (KIBOR) of 6.5% plus 180 basis points has been used for calculating the debt servicing.

4.6.6. Based on the project cost of US\$ 783.951 million, debt @ 70% of the project cost works out to be US\$ 548.766 million. Accordingly revised debt servicing component on the basis of 3 months KIBOR 6.5%+1.80% margin along with 40% sharing for power producer works out to Rs. 0.8123 per kWh and the same is allowed.





5. **ORDER**

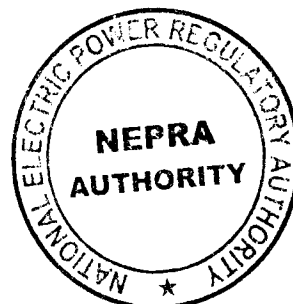
- I. The Authority hereby approves the following generation tariff for National Power Park Management Company (Private) Limited for its combined cycle power project at Haveli Bahadar Shah on the basis of net power output of 1,215.176 MW on RLNG and 1,064.887 MW on HSD along with adjustments/indexations for delivery of electricity to the power purchaser:

Tariff Components	RLNG	HSD	Adjustment/Indexation
Capacity Charges (Rs./kW/hr):			
Fixed O&M (Local)	0.0535	0.0618	CPI (General)
Fixed O&M (Foreign)	0.1312	0.1515	US CPI & Rs./US\$
Cost of working capital	0.1604	0.1853	KIBOR & Fuel Price
Insurance	0.0606	0.0700	Actual subject to maximum limit
ROE	0.5279	0.6096	Rs./US\$
Debt Servicing (years 1 – 10 only)	0.8123	0.9380	KIBOR
Total 1-10 years	1.7459	2.0162	
Total 11-30 years	0.9336	1.0782	
Energy Charge RLNG (Rs./kWh):			
Fuel cost Component	7.5966	14.0550	Fuel Price
Variable O&M (Foreign)	0.1340	0.1934	US CPI & Rs./US\$
Energy Total	7.7306	14.2484	
Total Tariff (Rs./kWh) Levellized	9.3209	16.0849	

The Tariff Tables and Debt Service Schedule are attached as Annex-I, Annex-II, Annex-III and Annex-IV to this determination.

Tariff on Single Cycle (RLNG only)

Description	Rs./kWh	Adjustment /Indexation
Fuel cost component	10.4726	Fuel price
Variable O&M (Foreign)	0.1340	US CPI & Rs./US\$
Fixed O&M (Local)	0.0535	CPI General
Fixed O&M (Foreign)	0.1312	US CPI & Rs./US\$
Cost of working capital	0.1604	KIBOR and fuel price
Total	10.9517	



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II. Adjustments on Account of Project Cost Payables

In accordance with the decision of the Authority following adjustments shall be made after two years of COD of the Complex:

a) Adjustment of payable amount of USD 16.773 million under the head of "items not covered under EPC", which includes:

a. Site Housing Colony

The adjustment of cost for Site Housing Complex including the Auditorium which amounts to US\$ 11.664 million has been deferred. In case, the Petitioner fails to complete Site Housing Complex within 2 years from COD of the complex, a penalty shall be applicable @ KIBOR+ 3% per annum of the approved cost of Housing Complex.

b. Adjustment of BOP spares of amount of US\$ 5.109 million,

b) Adjustment of payable amount of USD 10.907 million under the head of "Non-EPC", which includes:

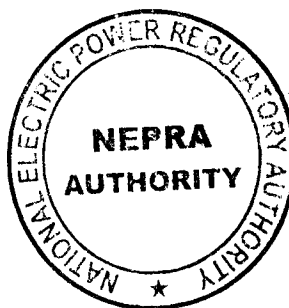
- Engineering Consultancy amounting to US\$ 0.760 million,
- Land Cost amounting to US\$ 0.147 million,
- Security Surveillance amounting to US\$ 10.0 million

III. Adjustment due to Variation in Net Capacity

The reference tariff was determined on the basis of guaranteed net capacity of 1,207.90 MW with auxiliary consumption of 1.84% (22.640 MW) which was subject to adjustment at the time of COD. At COD Initial Dependable Capacity (IDC) has been established as 1215.176 MW. Accordingly all the tariff components of capacity charge have been adjusted based on the revised net capacity. Auxiliary has been established as 1.25% instead of 1.84% determined at the time of reference generation tariff.

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 EPC 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:



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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 US\$ 6.0673 million at Rs. 106.35/US\$.
$P_{(Act)}$	=	Actual Premium or 1% of the EPC cost at exchange rate prevailing on the 1st day of the insurance coverage period whichever is lower.

V. Indexations:

The following indexations shall be applicable to the reference tariff;

i) Indexation of Return on Equity (ROE)

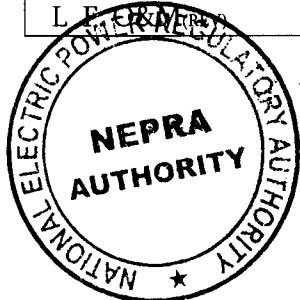
ROE component of tariff shall be quarterly indexed on account of variation in Rs./US\$ parity according to the following formula:

$ROE_{(Rev)}$	=	$ROE_{(Ref)} * ER_{(Rev)} / ER_{(Ref)}$
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. 106.35/US\$

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:

$F V. O\&M_{(REV)}$	=	$F V. O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$
$L F. O\&M_{(REV)}$	=	$L F. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
$F F. O\&M_{(REV)}$	=	$F F. O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$
Where:		
$F V. O\&M_{(REV)}$	=	The revised Variable O&M Foreign Component of Tariff
$L F. O\&M_{(REV)}$	=	The revised Fixed O&M Local Component of Tariff



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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
L F. O&M _(REF)	=	The reference Fixed O&M Local Component of Tariff
F F. O&M _(REF)	=	The reference Fixed O&M Foreign Component of Tariff
CPI _(REV)	=	The revised CPI (General)
CPI _(REF)	=	The reference CPI (General) of 220.25 for March 2018
US CPI _(REV)	=	The revised US CPI (All Urban Consumers)
US CPI _(REF)	=	The reference US CPI of 249.55 for March 2018
ER _(REV)	=	The revised TT& OD selling rate of US dollar
ER _(REF)	=	The reference TT& OD selling rate of RS. 115.40/US\$

iii) Indexation for KIBOR 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 KIBOR according to the following formula;

ΔI	=	$P_{(REV)} * (KIBOR_{(REV)} - 6.50\%) / 4$
Where:		
ΔI	=	The variation in interest charges applicable corresponding to variation in 3 months KIBOR. ΔI can be positive or negative depending upon whether $KIBOR_{(REV)}$ is $>$ or $<$ 6.50%. 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.

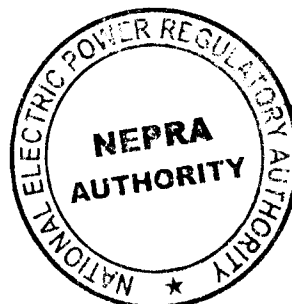
iv) Cost of Working Capital

During operational period, the cost of working capital shall be adjusted quarterly for variation in KIBOR and fuel prices only.

Any post-COD variation in RLNG price (including impact of US\$ to PKR indexation) over and above (or vice versa) the cost for escrow amount locked at COD will be added to or reduced from cost of SBLC as part of cost of working capital.

VI. Fuel Price Adjustment

The fuel cost component of tariff shall be adjusted on account of fuel price variation as and when notified by the relevant authority as per the following mechanism:





$FCC_{RLNG(Rev)}$	=	$FCC_{RLNG(Ref)} * P_{RLNG(Rev)} / P_{RLNG(Ref)}$
Where:		
$FCC_{RLNG(Rev)}$	=	The revised fuel cost component on RLNG
$FCC_{RLNG(Ref)}$		The reference fuel cost component on RLNG
$P_{RLNG(Rev)}$	=	The revised HHV RLNG price notified by the relevant Authority
$P_{RLNG(Ref)}$	=	The reference HHV RLNG price of US\$ 10.8028/MMBtu
$FCC_{HSD(Rev)}$	=	$FCC_{HSD(Ref)} * P_{HSD(Rev)} / P_{HSD(Ref)}$
Where:		
$FCC_{HSD(Rev)}$	=	The revised fuel cost component on HSD
$FCC_{HSD(Ref)}$		The reference fuel cost component on HSD
$P_{HSD(Rev)}$	=	The revised HHV HSD price notified by the relevant Authority
$P_{HSD(Ref)}$	=	The reference HHV HSD price of Rs. 77.49/liter.

VII. Terms & Conditions

The following terms and conditions shall apply to the determined tariff:

- i. The plant availability shall be 92%.
- ii. The tariff control period shall be 30 years from the date of commercial operation.
- iii. The dispatch will be at appropriate voltage level mutually agreed between the power purchaser and the power producer.
- iv. The dispatch shall be in accordance with economic merit order.
- v. In case the company is obligated to pay any tax on its income from generation of electricity, or any duties and/or taxes, not being of refundable nature, are imposed on the company, the exact amount paid by the company on these accounts shall be reimbursed on production of original receipts in lump sum and this payment shall be considered as a pass-through payment. However, withholding tax on dividend shall not be passed through.
- vi. General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the Power Purchase Agreement.

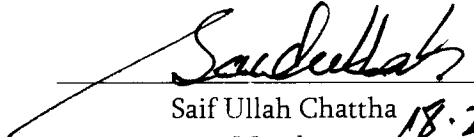





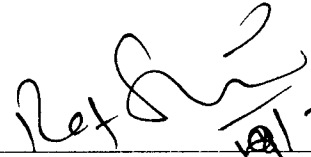
VIII. NOTIFICATION


The above Order of the Authority along with 4 Annexes 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.

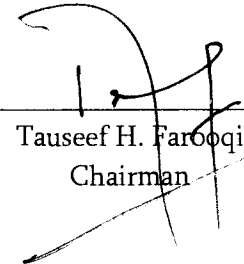
AUTHORITY


Saif Ullah Chattha
Member
18.2.2020

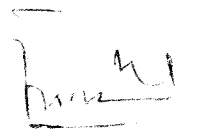

Rehmatullah Baloch
Member
18/02/2020


Rafique Ahmed Shaikh
Member
18/2/2020


Engr. Bahadur Shah
Member


Tauseef H. Farooqi
Chairman




19/02/20



**HBS RLNG 1,230.540 MW
REFERENCE TARIFF TABLE AT COD**

Year	Energy Purchase Price (Rs. kWh)			Capacity Purchase Price (PKR kW Hour)							Total Tariff			
	Fuel component	Var. O&M	Total EPP	Fixed O&M local	Fixed O&M foreign	Cost of W C	Insurance	ROE	Debt Repayment	Interest Charges	Total CPP	Capacity charge@ 92%	Rs. kWh	Cents kWh
1	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.3685	0.4438	1.7459	1.8977	9.6283	9.0532
2	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.4000	0.4122	1.7459	1.8977	9.6283	9.0532
3	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.4343	0.3780	1.7459	1.8977	9.6283	9.0532
4	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.4715	0.3408	1.7459	1.8977	9.6283	9.0532
5	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.5118	0.3004	1.7459	1.8977	9.6283	9.0532
6	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.5557	0.2566	1.7459	1.8977	9.6283	9.0532
7	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.6032	0.2090	1.7459	1.8977	9.6283	9.0532
8	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.6549	0.1574	1.7459	1.8977	9.6283	9.0532
9	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.7110	0.1013	1.7459	1.8977	9.6283	9.0532
10	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.7718	0.0404	1.7459	1.8977	9.6283	9.0532
11	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
12	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
13	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
14	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
15	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
16	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
17	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
18	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
19	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
20	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
21	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
22	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
23	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
24	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
25	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
26	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
27	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
28	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
29	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230
30	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	-	-	0.9336	1.0148	8.7454	8.2230

Average

1-10	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.5483	0.2640	1.7459	1.8977	9.6283	9.0532
11-30	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.0000	0.0000	0.9336	1.0148	8.7454	8.2230
1-30	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.1828	0.0880	1.2044	1.3091	9.0397	8.4998

Levelized

1-30	7.5966	0.1340	7.7306	0.0535	0.1312	0.1604	0.0606	0.5279	0.3352	0.1943	1.4630	1.5903	9.3209	8.7642
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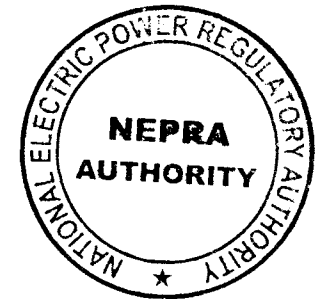
9.3209 Rs./kWh

8.7642 US Cents/kWh



**HBS (HSD) 1,230.540 MW
REFERENCE TARIFF TABLE AT COD**

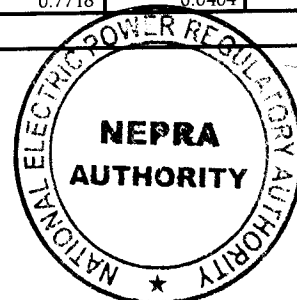
Year	Energy Purchase Price: Rs./kWh				Capacity Purchase Price: PKR/kW Hour								Total Tariff	
	Fuel component	Var. O&M	Total EPP	Fixed O&M local	Fixed O&M foreign	Cost of W C	Insurance	ROE	Debt Repayment	Interest Charges	Total CPP	Capacity charge@ 92%	Rs. kWh	Cents kWh
1	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.4255	0.5125	2.0162	2.1915	16.4399	15.4580
2	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.4620	0.4760	2.0162	2.1915	16.4399	15.4580
3	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.5015	0.4365	2.0162	2.1915	16.4399	15.4580
4	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.5444	0.3936	2.0162	2.1915	16.4399	15.4580
5	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.5911	0.3469	2.0162	2.1915	16.4399	15.4580
6	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.6417	0.2963	2.0162	2.1915	16.4399	15.4580
7	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.6966	0.2414	2.0162	2.1915	16.4399	15.4580
8	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.7562	0.1818	2.0162	2.1915	16.4399	15.4580
9	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.8210	0.1170	2.0162	2.1915	16.4399	15.4580
10	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.8913	0.0467	2.0162	2.1915	16.4399	15.4580
11	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
12	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
13	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
14	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
15	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
16	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
17	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
18	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
19	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
20	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
21	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
22	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
23	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
24	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
25	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
26	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
27	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
28	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
29	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
30	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	-	-	1.0782	1.1719	15.4203	14.4993
Average														
1-10	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.6331	0.3049	2.0162	2.1915	16.4399	15.4580
11-30	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.0000	0.0000	1.0782	1.1719	15.4203	14.4993
1-30	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.2110	0.1016	1.3908	1.5118	15.7602	14.8189
Levelized														
1-30	14.0550	0.1934	14.2484	0.0618	0.1515	0.1853	0.0700	0.6096	0.3870	0.2244	1.6896	1.8365	16.0849	15.1242
16.0849 Rs./kWh 15.1242 US Cents/kWh														



National Power Parks Management (Private) Limited
Haveli Bahadur Shah Project
Debt Service Schedule (RLNG)

Gross Capacity	1,230.540 MWs	US\$/PKR Parity	106.35
Net Capacity	1,215.176 MWs	Debt	548.77 US\$ Million
KIBOR	6.50%	Debt in Pak Rupees	58,362.42 Rs. Million
Spread over KIBOR	1.80%		
Total Interest Rate	8.30%		

Period	Principal Million Rs.	Principal Repayment Million Rs.	Interest Million Rs.	Balaaance Million Rs.	Debt Service Million Rs.	Principal Repayment Rs./kW/h	Interest Rs./kW/h	Debt Servicing Rs./kW/h
1	58,362.42	950.62	1,211.02	57,411.80	2,161.64			
2	57,411.80	970.35	1,191.29	56,441.45	2,161.64			
3	56,441.45	990.48	1,171.16	55,450.97	2,161.64			
4	55,450.97	1,011.04	1,150.61	54,439.93	2,161.64	0.3685	0.4438	0.8123
1st Year		3,922.49	4,724.08		8,646.58			
5	54,439.93	1,032.02	1,129.63	53,407.92	2,161.64			
6	53,407.92	1,053.43	1,108.21	52,354.49	2,161.64			
7	52,354.49	1,075.29	1,086.36	51,279.20	2,161.64			
8	51,279.20	1,097.60	1,064.04	50,181.60	2,161.64	0.4000	0.4122	0.8123
2nd Year		4,258.33	4,388.24		8,646.58			
9	50,181.60	1,120.38	1,041.27	49,061.22	2,161.64			
10	49,061.22	1,143.62	1,018.02	47,917.60	2,161.64			
11	47,917.60	1,167.35	994.29	46,750.24	2,161.64			
12	46,750.24	1,191.58	970.07	45,558.67	2,161.64	0.4343	0.3780	0.8123
3rd Year		4,622.93	4,023.65		8,646.58			
13	45,558.67	1,216.30	945.34	44,342.37	2,161.64			
14	44,342.37	1,241.54	920.10	43,100.83	2,161.64			
15	43,100.83	1,267.30	894.34	41,833.52	2,161.64			
16	41,833.52	1,293.60	868.05	40,539.93	2,161.64	0.4715	0.3408	0.8123
4th Year		5,018.74	3,627.83		8,646.58			
17	40,539.93	1,320.44	841.20	39,219.49	2,161.64			
18	39,219.49	1,347.84	813.80	37,871.65	2,161.64			
19	37,871.65	1,375.81	785.84	36,495.84	2,161.64			
20	36,495.84	1,404.36	757.29	35,091.48	2,161.64	0.5118	0.3004	0.8123
5th Year		5,448.44	3,198.13		8,646.58			
21	35,091.48	1,433.50	728.15	33,657.99	2,161.64			
22	33,657.99	1,463.24	698.40	32,194.75	2,161.64			
23	32,194.75	1,493.60	668.04	30,701.14	2,161.64			
24	30,701.14	1,524.60	637.05	29,176.55	2,161.64	0.5557	0.2566	0.8123
6th Year		5,914.93	2,731.64		8,646.58			
25	29,176.55	1,556.23	605.41	27,620.32	2,161.64			
26	27,620.32	1,588.52	573.12	26,031.80	2,161.64			
27	26,031.80	1,621.48	540.16	24,410.31	2,161.64			
28	24,410.31	1,655.13	506.51	22,755.18	2,161.64	0.6032	0.2090	0.8123
7th Year		6,421.37	2,225.21		8,646.58			
29	22,755.18	1,689.47	472.17	21,065.71	2,161.64			
30	21,065.71	1,724.53	437.11	19,341.18	2,161.64			
31	19,341.18	1,760.31	401.33	17,580.86	2,161.64			
32	17,580.86	1,796.84	364.80	15,784.02	2,161.64	0.6549	0.1574	0.8123
8th Year		6,971.16	1,675.42		8,646.58			
33	15,784.02	1,834.13	327.52	13,949.90	2,161.64			
34	13,949.90	1,872.18	289.46	12,077.71	2,161.64			
35	12,077.71	1,911.03	250.61	10,166.68	2,161.64			
36	10,166.68	1,950.69	210.96	8,216.00	2,161.64	0.7110	0.1013	0.8123
9th Year		7,568.03	1,078.55		8,646.58			
37	8,216.00	1,991.16	170.48	6,224.83	2,161.64			
38	6,224.83	2,032.48	129.17	4,192.35	2,161.64			
39	4,192.35	2,074.65	86.99	2,117.70	2,161.64			
40	2,117.70	2,117.70	43.94	0.00	2,161.64	0.7718	0.0404	0.8123
10th Year		8,216.00	430.58		8,646.58			



National Power Parks Management (Private) Limited
Haveli Bahadur Shah Project
Debt Service Schedule (HSD)

Gross Capacity	1,085.400 MWs	US\$/PKR Parity	106.35
Net Capacity	1,064.887 MWs	Debt	548.77 US\$ Million
KIBOR	6.50%	Debt in Pak Rupees	58,362.42 Rs. Million
Spread over KIBOR	1.80%		
Total Interest Rate	8.30%		

Period	Principal Million Rs.	Principal Repayment Million Rs.	Interest Million Rs.	Balaance Million Rs.	Debt Service Million Rs.	Principal Repayment Rs./kW/h	Interest Rs./kW/h	Debt Servicing Rs./kW/h
1	58,362.42	950.62	1,211.02	57,411.80	2,161.64			
2	57,411.80	970.35	1,191.29	56,441.45	2,161.64			
3	56,441.45	990.48	1,171.16	55,450.97	2,161.64			
4	55,450.97	1,011.04	1,150.61	54,439.93	2,161.64	0.4205	0.5064	0.9269
1st Year		3,922.49	4,724.08		8,646.58			
5	54,439.93	1,032.02	1,129.63	53,407.92	2,161.64			
6	53,407.92	1,053.43	1,108.21	52,354.49	2,161.64			
7	52,354.49	1,075.29	1,086.36	51,279.20	2,161.64			
8	51,279.20	1,097.60	1,064.04	50,181.60	2,161.64	0.4565	0.4704	0.9269
2nd Year		4,258.33	4,388.24		8,646.58			
9	50,181.60	1,120.38	1,041.27	49,061.22	2,161.64			
10	49,061.22	1,143.62	1,018.02	47,917.60	2,161.64			
11	47,917.60	1,167.35	994.29	46,750.24	2,161.64			
12	46,750.24	1,191.58	970.07	45,558.67	2,161.64	0.4956	0.4313	0.9269
3rd Year		4,622.93	4,023.65		8,646.58			
13	45,558.67	1,216.30	945.34	44,342.37	2,161.64			
14	44,342.37	1,241.54	920.10	43,100.83	2,161.64			
15	43,100.83	1,267.30	894.34	41,833.52	2,161.64			
16	41,833.52	1,293.60	868.05	40,539.93	2,161.64	0.5380	0.3889	0.9269
4th Year		5,018.74	3,627.83		8,646.58			
17	40,539.93	1,320.44	841.20	39,219.49	2,161.64			
18	39,219.49	1,347.84	813.80	37,871.65	2,161.64			
19	37,871.65	1,375.81	785.84	36,495.84	2,161.64			
20	36,495.84	1,404.36	757.29	35,091.48	2,161.64	0.5841	0.3428	0.9269
5th Year		5,448.44	3,198.13		8,646.58			
21	35,091.48	1,433.50	728.15	33,657.99	2,161.64			
22	33,657.99	1,463.24	698.40	32,194.75	2,161.64			
23	32,194.75	1,493.60	668.04	30,701.14	2,161.64			
24	30,701.14	1,524.60	637.05	29,176.55	2,161.64	0.6341	0.2928	0.9269
6th Year		5,914.93	2,731.64		8,646.58			
25	29,176.55	1,556.23	605.41	27,620.32	2,161.64			
26	27,620.32	1,588.52	573.12	26,031.80	2,161.64			
27	26,031.80	1,621.48	540.16	24,410.31	2,161.64			
28	24,410.31	1,655.13	506.51	22,755.18	2,161.64	0.6884	0.2385	0.9269
7th Year		6,421.37	2,225.21		8,646.58			
29	22,755.18	1,689.47	472.17	21,065.71	2,161.64			
30	21,065.71	1,724.53	437.11	19,341.18	2,161.64			
31	19,341.18	1,760.31	401.33	17,580.86	2,161.64			
32	17,580.86	1,796.84	364.80	15,784.02	2,161.64	0.7473	0.1796	0.9269
8th Year		6,971.16	1,675.42		8,646.58			
33	15,784.02	1,834.13	327.52	13,949.90	2,161.64			
34	13,949.90	1,872.18	289.46	12,077.71	2,161.64			
35	12,077.71	1,911.03	250.61	10,166.68	2,161.64			
36	10,166.68	1,950.69	210.96	8,216.00	2,161.64	0.8113	0.1156	0.9269
9th Year		7,568.03	1,078.55		8,646.58			
37	8,216.00	1,991.16	170.48	6,224.83	2,161.64			
38	6,224.83	2,032.48	129.17	4,192.35	2,161.64			
39	4,192.35	2,074.65	86.99	2,117.70	2,161.64			
40	2,117.70	2,117.70	43.94	0.00	2,161.64	0.8807	0.0462	0.9269
10th Year		8,216.00	430.58		8,646.58			

