National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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No. NEPRA/R/TRF-453/QATPL-2018/2854-2856
January 27, 2020

Subject: **Decision of the Authority in the matter of Tariff Petition filed by Quaid-e-Azam Thermal Power (Pvt.) Ltd. (QATPL) for Modification of Tariff dated April 14, 2016 of RLNG Based Power Plant of 1180.13 MW at Bhikki, Sheikhupura, Punjab**

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-453/QATPL-2018.

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

27 01 20
(Syed Safeer 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 Petition filed by Quaid-E-Azam Thermal Power (Private) Limited (QATPL) for Modification of Tariff Dated April 14, 2016 of RLNG Based Power Plant of 1180.13 MW at Bhikki, Shekihupura, Punjab

1. BACKGROUND

1.1. Quaid-e-Azam Thermal Power (Private) Limited (hereinafter "QATPL" or the "Company" or the "Petitioner") is a private limited company, wholly owned by the Government of Punjab (GoPb), incorporated under the Companies Ordinance 1984 on March 25, 2015 with an objective to set up RLNG based power plant on fast track basis at Bhikki, Shekihupura, Punjab. The Facility is a thermal Independent Power Producer (IPP) using Re-gasified Liquefied Natural Gas (RLNG) as the primary fuel and High-Speed Diesel (HSD) as back-up/emergency fuel. The proposed Project is based on the combined cycle technology with 2 GE 9HA gas turbines and one steam turbine with installed capacity of 1180.13 MW at Reference Site Conditions (net 1,156.675 MW). The project has been set up on build, own and operate basis. The project has achieved commercial operations on 20th May 2018.

1.2. QATPL filed a tariff petition for approval of the reference generation tariff for Single Cycle and Combined Cycle Operation for the proposed project vide its letter dated February 15, 2016. The Authority vide its decision no. NEPRA/TRF-347/QATPL-2016/5034-5037 dated April 14, 2016 approved following project cost and generation tariff for combined and simple cycle operations:

Description	USD Millions
EPC cost:	**553.710**
Offshore EPC Cost	424.020
Onshore EPC Cost	115.240
Items not covered in the EPC contract scope:	14.450
Combustion Monitoring System	0.500
BOP Spares	1.710
Site Housing Complex with recreational facilities	2.020
Auditorium	0.900
Plant Simulator System & Training	2.300
Fuel Gas Treatment Plant	2.000
Buffer Vessel	4.250
Acquisition of Land	0.770
Non EPC Cost:	**53.171**
Engineering consultancy	10.000
O&M mobilization	6.000
Land Cost	2.000
Insurance during construction	5.537
Security Surveillance	8.257
Administrative Expenses during construction	10.508
Testing & Commissioning	10.869

NEPRA AUTHORITY

Customs Duties & Cess	25.653
LTSA Initial Spare Parts	20.880
Gas Pipeline Cost	13.600
One month LNG Escrow Account	35.772
CAPEX	**702.786**
Financing Fees & Charges	18.448
Interest During Construction	48.742
Total Project Cost	**769.976**

Tariff on Combined Cycle

Description	RLNG	HSD
Energy Charge (Rs./kWh):		
Fuel cost component	4.5101	8.4527
Variable O&M	0.3169	0.4572
Total	**4.8270**	**8.9099**
Capacity Charge (Rs./kW/hour):		
Fixed O&M (Local)	0.0647	0.0647
Fixed O&M (Foreign)	0.1453	0.1453
Cost of working capital	0.0970	0.0970
Insurance	0.0574	0.0574
Return on Equity	0.4481	0.4481
Debt servicing (1-10 years only)	0.9281	0.9281
Total 1-10 years	1.7405	1.7405
Total 11-30 years	0.8125	0.8125
Avg. Tariff 1-10 years @ 92% (Rs./kWh)	6.7189	10.8018
Avg. Tariff 11-30 years @ 92% (Rs./kWh)	5.7101	9.7930
Levelized tariff (Rs./kWh)	**6.3676**	**10.4506**
Levelized tariff (Cents/kWh)	**6.0644**	**9.9529**

Tariff on Simple Cycle RLNG

Description	Rs./kWh
Fuel cost component	7.0377
Variable O&M	0.3169
Fixed O&M (Local)	0.0647
Fixed O&M (Foreign)	0.1453
Cost of working capital	0.0970
Total	**7.6616**

NEPRA AUTHORITY

1.3. QATPL submitted Review Motion on June 13, 2018 against determination of the Authority dated 14th April 2016. The Authority did not admit the review on the basis of following observations:

- Review Motion is barred by time by two years and two months.
- Power Plant has already achieved COD.
- Company needs to file COD Adjustment instead of Review Motion.

2. PETITION FOR MODIFICATION OF TARIFF

2.1. Subsequently, QATPL vide letter dated September 19, 2018, filed Petition for Modification of its generation tariff. The petitioner submitted the subject petition while referring to Section 7 and 31 of NEPRA Act, Rule 3 of the NEPRA Tariff (Standards & Procedure) Rules, 1998 and other enabling provisions of NEPRA law.

2.2. The Authority admitted the subject petition on 5th November 2018. Notice of admission/hearing along with salient features of the modification petition were published in the newspapers on 12th January 2019, inviting interested persons to participate in the proceedings by filing intervention request or comments. Individual notices along with salient features of the modification petition were also sent to stakeholders on 15th January 2019.

3. SALIENT FEATURES OF THE MODIFICATION PETITION

3.1. Salient features of the Modification Petition are as under:

i. Approval of increase in construction period as per actual instead of approved 27 months.

ii. Approval of the WWF, WPPF, Turnover Tax and Income Tax as pass through items under PPA.

iii. Approval of the arrangement fee and other charges associated with Stand-By Letter of Credit and working capital facilities during the tariff control period.

iv. Approval of the implied cost of USD 3.14 per annum on account of free startups and its indexation with the fuel price.

v. Approval of the regulatory fee/charges to SECP, NEPRA & PPIB and administrative cost for Pre-NTP period of 5-6 months in administration expenses.

vi. Approval of the O&M mobilization of USD 11.76 million instead of USD 6 million.

vii. Approval of determined Variable & Fixed O&M cost without it's adjustment as per signed O&M agreement.

viii. Approval of the Testing and Commissioning cost as per actual.

ix. Approval of the CPP Component for HSD fuel tariff based on the net HSD output of 1,039.980 MW.

x. Approval of the Part Load effect to be applied on the variable O&M component.

xi. Approval of the Engineering and Consultancy Cost as per actual.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

xii. Approval of the Insurance Cost during Operations as per actual without capping at 1% of the EPC cost.

4. COMMENTS AND INTERVENTION REQUESTS

4.1. In response to the notice of hearing, the Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) vide letter dated January 22, 2019 filed comments in the matter which have been discussed under relevant issues.

5. FRAMING OF ISSUES

5.1. On the basis of the contents of the tariff modification petition, the Authority approved the following issues for the hearing:

a) Whether the requested increase in construction period as per actual instead of approved 27 months is justified?

b) Whether the request to allow WWF, WPPF, Turnover Tax and Income Tax as pass through items under the PPA is justified?

c) Whether the requested arrangement fee and other charges associated with Stand-By Letter of Credit and working capital facilities during the tariff control period are justified?

d) Whether the requested implied cost of USD 3.14 per annum on account of free startups and its indexation with the fuel price is justified?

e) Whether the request to allow regulatory fee/charges to SECP, NEPRA & PPIB and administrative cost for Pre-NTP period of 5-6 months in administration expenses are justified?

f) Whether the requested O&M mobilization of USD 11.76 million instead of USD 6 million is justified?

g) Whether the request to allow determined Variable & Fixed O&M cost without it's adjustment as per signed O&M agreement is justified?

h) Whether the requested Testing and Commissioning cost as per actual is justified?

i) Whether the requested CPP Component for HSD fuel tariff based on the net HSD output of 1,039.980 MW is justified?

j) Whether the requested output degradation and part load adjustment on Variable O&M Component is justified?

k) Whether the request to allow Engineering and Consultancy Cost as per actual is justified?

l) Whether the request to allow Insurance Cost during Operations as per actual without capping at 1% of the EPC cost is justified?

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

6. HEARING

6.1. In order to consider the petition for modification of tariff determination, the Authority decided to provide an opportunity of hearing to the petitioner before making a decision. The hearing in the matter was schedule on 23rd January 2019. Notice of hearing was published in the newspapers on 12th January 2019. Individual notices were also sent to stakeholders on 15th January 2019.

6.2. Hearing was held as per schedule in NEPRA Tower Islamabad which was participated by the the representatives from QATPL, CPPAGL, PPIB and other stakeholders were Present.

7. INFORMATION DIRECTION

7.1. In order to process the tariff modification petition, the Petitioner was also asked vide letter dated March 07, 2019 to submit the desired information. The petitioner in response vide letter dated April 23, 2019 submitted its reply.

8. CONSIDERATION OF THE VIEWS OF THE STAKEHOLDERS, ANALYSIS, FINDINGS AND RECOMMENDATIONS ON IMPORTANT ISSUES

8.1. After hearing the Petitioner and carefully going through the record, the point-wise discussion on the grounds raised by the Petitioner and the findings/decision of the Authority is provided in the succeeding paragraphs.

Whether the requested increase in construction period as per actual instead of approved 27 months is justified?

8.2. According to the Petitioner, the Authority allowed a construction period of 27 months, whereas, typical time taken for completion of such large projects is 30 to 54 months. The Petitioner highlighted that the Bhikki Power Project has already surpassed its allowed construction period and the aggressive timeline of 27 months under the EPC contract could not be demonstrated. The Petitioner further submitted that the aggressive construction timeline of 27 months agreed with EPC contractor even in case of other RLNG Projects could not be achieved due to various factors, including but not limited to, logistical, technical and environmental challenges and therefore needs to be duly considered.

8.3. According to QATPL, it has made extensive efforts for an even earlier completion by negotiating a very stringent timeline for completion with the EPC Contractor, however, the Petitioner should not be penalized for any delay in this regard. The Petitioner requested the Authority to allow one-time adjustment in the tariff at the time of COD based on the actual completion period.

8.4. CPPAG in its comments submitted that, according to the EPC Agreement, maximum construction period allowed was 27 months and the delay in construction period attracted liquidated damages. Since the delay in commissioning has already been protected through LDs, extended construction period is not justified.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

8.5. It is to be noted that no force majeure event has been declared which resulted in delay in construction of the project under the IA/PPA. According to QATPL's Annual Report – 2018 page 18 under the head of "Delay in the COD of the project / Liquidated Damages" "due to certain technical issues, the COD of the project was delayed by five months against which the company has claimed liquidated damages of US$ 53.926 Million from the EPC contractor as stipulated in the EPC agreement. In case this amount is not disputed by the EPC contractor or the company wins the dispute, this amount shall be adjusted towards the project cost overrun". According to Para 10.1 of the Audited Financial Statements "The Company has charged liquidated damages to its EPC contractor amounting to USD 53.926 million during the year due to delays in completion of construction of the plant. The EPC contractor, vide letter HEI-HRI/FPKBKI/QATPL_0382 dated 27 June 2018 has offered an arrangement whereby security has been offered equal to the amount of liquidated damages till the matter is resolved amicably or settled through arbitration. Consequently, the amount of LC opened by the Company in favour of EPC contractor has been reduced by USD 53.926 million, however since the recoverability of liquidated damages is not virtually certain pending resolution of the matter; the management has not recorded the receivables from EPC contractor".

8.6. The construction period of 27 months was allowed on the basis of the EPC Contract. The agreed timelines in the EPC Contract may be aggressive, however, if these were impossible to achieve, the EPC Contractor would not have agreed as in case of non-compliance, LDs shall be paid by the EPC Contractor under the EPC Contract. Extension in COD can only be granted in case of a declared force majeure event under the PPA/IA, approved by PPIB/NTDC/CPPA-G. Since no such event has happened, there is no justification to enhance the construction period. Under the EPC Contact, the Petitioner is protected through imposition of LDs on the EPC Contractor for not adhering to the agreed construction period, therefore, allowing additional construction period and the resultant requested additional costs would be unjustified and would burden the end consumer unnecessarily.

8.7. In similar cases of NPPMCL's two power plants, the Authority has already declined the similar request of increase in construction period over and above the period agreed in the EPC contract. Accordingly, the Authority has decided to decline the request of the Petitioner for extension in construction period and the resultant additional costs.

Whether the request to allow WWF, WPPF, Turnover Tax and Income Tax as pass through items under the PPA is justified?

8.8. The Petitioner requested the Authority to allow certain pass-through items including Workers Welfare Fund (WWF), Workers Profit Participation Fund (WPPF), turnover Tax during construction among various other related items. The Petitioner requested that aforesaid components be treated as part of the project/operating cost as per actual basis and allowed as pass-through to the power purchaser.

8.9. According to the Petitioner, in line with the industry norm, Section 9.3 (a) of the PPA executed between QATPL and CPPA-G dated 22nd July 2016 entitles the Petitioner to recover WFF and WPPF as pass-through items, however, there still exists lack of clarity with respect to allowance of contributions, if any, the Petitioner may be required to make on account of WWF and WPPF during the construction period.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

8.10. The petitioner requested to allow these costs, if incurred during the construction period as pass-through or alternatively it can be allowed to adjust/net off against the interest income on which such WPPF/WWF and turnover tax were arisen during construction period.

8.11. The petitioner further sought clarification of the reimbursement of Income Tax as pass through within 30 days of payments by the Power Purchaser without any undue hassle and delay. Given the materiality of income tax obligation and the underlined financing required to fund the same, it is imperative to obtain clarity to avoid any ambiguity during the operation period.

8.12. CPPAGL commented that the Authority vide its determination dated 14-04-2016 in Para (Viii) sub-para (xi) determined that:

> "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. This payment shall be considered as a pass-through payment spread over a period of twelve months. However, withholding tax on dividend shall not be passed through."

> In line with the NEPRA's aforementioned Tariff determination, CPPA is also of the view that payment on account of withholding tax on dividends should not be allowed to be reimbursed. It is also established from the fact that withholding tax on dividends is actually paid on behalf of shareholders whereas CPPA is obliged to reimburse the taxes paid by the company only and not the shareholders.

> As far WWF and WPPF are considered, these are neither tax on income on generation of electricity nor duties/taxes (in the light of recent Supreme Court judgment). Furthermore, these are considered as deductible allowances u/s 60A and 60B under Income Tax Ordinance, 2001. Therefore, the same should not be treated as pass through items.

8.13. As submitted by the Petitioner, WWF and WPPF are standard items of the PPA and are pass-through under Section 9.3(a) of the PPA. There is no ambiguity on the application of PPA clause during the operational period post COD and the Petitioner has not requested any clarification. However, the Petitioner has earned some interest income during the construction phase and as per the applicable laws has to pay WWF, WPPF and turnover tax. The Petitioner is requesting either to allow actual payment on these three items as pass-through or allow adjustment of these against the interest income so that he net proceeds from interest income shall be treated as deductible at the time of COD Adjustment.

8.14. In the opinion of the Authority, the request of the Petitioner is reasonable and accepted as such. Any payment on account of WWF, WPPF and turnover tax on the interest income during the construction period shall be netted off against such income and net proceeds shall be treated as deductible at the time of COD Adjustment.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

8.15. The second request of the Petitioner pertains to reimbursement of income tax during the operational period. As per the prescribed mechanism, income tax paid by the company, if any, shall be reimbursed over a period of 12 months. Keeping in view the materiality of the income tax obligations and underlying financing requirement to fund the same, the Petitioner requested to clarify the reimbursement within 30 days. The instant request of the Petitioner is justified. The Authority in the similar cases of NPPMCL's two power plants has allowed immediate reimbursement upon payment of income tax instead of reimbursement over 12 months period. Accordingly, the Authority has decided to replace Para VIII sub-para (xi) of the terms and conditions of decision dated 14-4-2016 as per following:

> "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."

Whether the requested arrangement fee and other charges associated with Stand-By Letter of Credit and working capital facilities during the tariff control period are justified?

8.16. According to the Petitioner, in the original petition, QATPL requested and the Authority allowed/determined the following costs under the working capital component of tariff:

i. Cost of Stand-By Letter of Credit (SBLC) to gas supplier under the Gas Supply Agreement (GSA) at 1.5% per annum;

ii. Cost of 60 days receivables (for fuel) at 3mKIBOR + 2%; and

iii. Cost of High Speed Diesel ("HSD") inventory for 7 days (60% load factor) at 3mKIBOR + 2%

8.17. According to the Petitioner, lacking visibility on the commercial terms and arrangement fees associated with working capital and SBLC facilities at tariff petition stage, the Petitioner was not able to assess the materiality of arrangement fees for the aforesaid facilities. The petitioner requested to allow the arrangement fees and other charges associated with SBLC and working capital facilities during the tariff control period.

8.18. CPPAGL commented that any increase in cost other than the approved mechanism for adjustment thereof by NEPRA would result in undue burden on consumers.

8.19. It is pertinent to mention here that the Authority did not allow any such costs separately to any other power project. The cost allowed under Financing Fee & Charges is sufficient to cover the arrangement fee for working capital that is why the projects do not separately request the cost for arrangement of working capital. Accordingly, the Authority has decided to decline the request of the Petitioner on this account.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Whether the requested implied cost of USD 3.14 per annum on account of free startups and its indexation with the fuel price is justified?

8.20. According to the petitioner, the PPA executed with CPPA-G requires the Company to provide a total of 33 free start-ups i.e. 15 hot, 15 warm and 3 cold. Since significant costs are incurred in these start-ups in terms of fuel, back feed electricity and variable operations and maintenance costs, in the absence of any reimbursement mechanism for these material costs, the Petitioner is likely to face continuing losses during the tariff control period. According to the Petitioner, lacking any firm PPA in place, the number of free start-ups and its material cost impact was not known at the time of tariff petition filing, accordingly, the same was not included /requested in the Tariff Petition.

8.21. The petitioner requested the Authority to allow implied free start-up costs of PKR **330,047,156** i.e. USD **3,143,306** annually along with indexation to the fuel price and import electricity price variation, with the base price being prevailing fuel price. The Petitioner provided the following brief description of the line items:

i. Free Start-Up Cost; This is the cost incurred in fuel and back-feed from startup till synchronization with the grid.

ii. Part Load Impact During Start-Up; This is to cater impact of part-load operation on the heat rate/efficiency and payment of variable fee under LTSA from synchronization till base-load;

Cost item	Annual cost (PKR)	Annual cost (USD)
Free start-up cost	241,603,145	2,300,982
Part load impact during start-up	88,444,011	842,324
Total	**330,047,156**	**3,143,306**

8.22. CPPA-G in its comments submitted that the matter regarding Free Start-ups has been discussed, negotiated, agreed and signed by the Parties in the Power Purchase Agreement in line with the industry practice. Therefore, there is no justification for reopening the issue as it may result in renegotiation of the entire PPA.

8.23. It is to be noted that the Authority did not allow such costs to any other power plant operating in the system. In similar cases of NPPMCL's two power plants, the Authority declined the similar request of allowing cost of free startups. Therefore, the Authority has decided to decline the instant request of the Petitioner under this head.

Whether the request to allow regulatory fee/charges to SECP, NEPRA & PPIB and administrative cost for Pre-NTP period of 5-6 months in administration expenses are justified?

8.24. According to the Petitioner, the Authority has allowed administrative cost during construction as per actual, subject to a maximum cap of USD 10.508 million. According to the Petitioner the administrative expenses submitted under Schedule K of the Tariff Petition mistakenly did not cover fee, subscription and charges payable to regulators, such as, PPIB, SECP and

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

NEPRA. Given the materiality of these expenses particularly in view of recent revision in the fee structure of PPIB, the Petitioner hereby requests the Authority to consider and allow the fee, subscription and charges amounting PKR 230.107487 million as presented in addition to the administrative cost already allowed. The detail of fee are as under:

Cost item	Cost already incurred (PKR)	Expected additional cost*	Total (PKR)
Credit rating fee	812,000	426,300	1,238,300
Authorized capital fee	46,210,870	-	46,210,870
Sub-total	**47,022,870**	**426,300**	**47,449,170**
NEPRA fees	37,821,524		37,821,524
PPIB fees for LOI, LOS, Financial Close and COD	10,436,400	134,400,000	144,836,400
Sub-total	**48,257,924**	**134,400,000**	**182,657,924**
Total	**95,280,794**	**134,826,300**	**230,107,094**

* To be incurred at the time of COD.

8.25. The Petitioner further submitted that the Authority did not take into account QATPL's administrative costs during Pre-NTP period of approximately 5 6 months and simply pro-rated the majority of administrative cost line items over a period of 27 months instead of 32 months which may not be the true reflection of the actual cost.

8.26. The mandatory fee paid/payable to SECP, PPIB and NEPRA seems justified and the same has also been allowed by the Authority to a similar power project namely Punjab Thermal Power Limited subject to adjustment as per actual at COD. Accordingly, the Authority has decided to allow the subscriptions fees and charges pertaining to SECP, PPIB and NEPRA on actual basis at COD as part of the project cost duly supported by verifiable documentary evidence in addition to already approved administrative cost which is also subject to adjustment as per actual.

8.27. The Authority has allowed administrative cost during construction period of 27 months which starts from Notice to Proceed (NTP). The Petitioner's request for administrative expenses during Pre-NTP period seems justified as human and other resources were utilized to reach the stage of NTP. In a similar case of Punjab Thermal RLNG Project, the Authority has allowed Pre-NTP cost subject to adjustment as per actual at COD. The Petitioner vide email dated 8th January 2020 indicated following pre-NTP costs:

Description	Rs.
Salaries & Wages	12,901,162
Executive Utilities	69,730
Medical Reimbursement	452
Entertainment Expenses	281,460
Printing & Stationery	459,628
Training & Fees	83,850
Traveling & Conveyance	769,081

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Communication Cost	185,395
Advertisement	1,891,551
Vehicle Fuel & Maintenance	743,462
Office Rent	10,301,915
Utilities	233,711
NEPRA & PPIB Fee	2,757,760
Legal & Professional Fee	188,960
Fees & Subscription	156,520
Other Admin Misc. & Unforseen exp. Repair and Maint.	518,643
Total	**31,543,280**

8.28. Accordingly, the Authority has decided to allow pre-NTP cost of approximately 5-6 months on actual basis at COD duly supported by verifiable documentary evidence with maximum cap of Rs. 31,543,280 in addition to already approved administrative cost which is also subject to adjustment as per actual.

Whether the request to allow determined Variable & Fixed O&M cost without it's adjustment as per signed O&M agreement is justified?

8.29. The Petitioner highlighted that O&M and LTSA agreements are for a period of 12 years only and possibility cannot be ruled out that the prices contracted variable and fixed O&M components at present may significantly increase after completion of 12 years on account of performance profile of the units in actual as well as the overall business environment / competition prevailing in the market by then.The Petitioner submitted that this exposes the company to possible losses that may result due to the fact that the tariff for variable and fixed O&M components has been locked in for a period of 30 years and is subject to actualization

8.30. According to the Petitioner, the Authority has allowed similar treatment in case of other IPPs whereby the IPPs take risk of the cost overrun risks on their own throughout the life of the project. According to the Petitioner, tariff orders and subsequently the PPAs do not go into micro cost centres and / or risk areas where costs may or may not occur, hence, in pre-determined tariff base lines such contingencies are taken care, whereas in our case such eventualities are not covered for the subsequent time of 30 years. Some of the cost centers / risk are as follows:

i. Software Upgrading

ii. IE Services

iii. SPF Spare Parts

iv. Professional Training and Refresher of O&M (Employer and Contactor)

v. Startup Charges (Free)

vi. Partial Load LTSA Variable Cost Impact

vii. Normally instrumentation & control system has to be replaced after 10 to 15 years as they become less reliable due to electronic components failures

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

viii. Electrical systems including generators will normally last 15 to 20 years

ix. Underground piping and wiring deteriorates over time due to corrosion and needs to be replaced after approx. 10-15 years

x. Insurance Deductibles Variation (Upward) witnessed these days

xi. Due to population settlement / concentration around the plant location, revamping of the access road and boundary wall shall become due.

xii. Intake structure due to settlement and different inflow outlets may require additional costs not foreseeable at this stage

8.31. In light of aforesaid, the Petitioner requested the Authority to safeguard it from possible future adverse fluctuations variable & fixed O&M cost by considering the present tariff determined for variable and fixed O&M components may be allowed as such without any actualization to be made on part of the actual contracted costs.

8.32. CPPAG in its written comments submitted that any increase in cost other than the approved mechanism for adjustment thereof by NEPRA would result in undue burden on consumers.

8.33. In view of the applicable indexation mechanism for O&M components of tariff which compensate local CPI on local components of tariff and US CPI and exchange rate for foreign components of tariff, the request of the Petitioner does not seem justified. In similar cases of other RLNG power projects, the Authority has rejected the similar request of the Petitioner for allowing determined O&M cost instead of its adjustment at the time of COD on the basis of actual O&M contract. The Authority has decided to maintain its earlier decision in the matter.

Whether the requested O&M mobilization of USD 11.76 million instead of USD 6 million is justified?

8.34. According to the petitioner, at the time of filing of the original tariff petition, the selection process for appointment of O&M contractor was initiated and in the absence of specific comparable benchmarks, requested the Authority to allow budgeted amount of USD 6 million in relation to the O&M contractor mobilization cost and the same was accepted by the Authority. Subsequently, the Petitioner has executed an O&M Agreement with the Joint Venture of Harbin Electric International Company Limited and Habib Rafiq (Private) Limited (hereinafter "O&M contractor"). As per the executed O&M Agreement, the Petitioner is required to make a total payment of USD 11.76 million to the O&M contractor (including the cost of single point failure spare parts required to be maintained for the Project for 12 years). The petitioner requested the learned Authority to allow and approve the O&M mobilization of USD 11.76 million as such.

8.35. CPPA-G in its written comments stated, that any increase in cost other than the approved mechanism for adjustment thereof by NEPRA would result in undue burden on consumers.

8.36. The O&M Agreement was executed on 12th October 2017. QATPL was asked to provide the details of mobilization cost as per O&M Agreement. QATPL vide email dated 27th November 2019 provided Schedule R Agreement Price of the O&M Agreement. According to the

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Schedule R, mobilization period cost is US$ 3.5 million(on the basis of 3 months mobilization period as submitted by the company) and cost of spare parts is US$ 7.5 million, details of which are provided hereunder:

Description	US$
Mobilization Period Tier 1 Recommended Spare Parts Fee (Lump sum)	2,500,000
Mobilization Period Initial Fee (Lump sum)	2,000,000
Mobilization Period fixed Monthly Fee (3months *US$ 500000/month)	1,500,000
Tier 2 Recommended Spare Parts Fee (Lump sum)	5,000,000
Total Mobilization as per O&M Agreement	**11,000,000**
Cost of single point failure spare parts (without any evidence)	760,000
Total Requested Mobilization Cost	**11,760,000**

8.37. In the determination dated 14th April 2016, the Authority allowed BOP spares of US$ 1.71 million against the requested cost of US$ 6 million. In similar cases of HBS and Balloki projects of NPPMCL, the Authority revised the cap for BOP spares as per the signed O&M Agreement subject to its adjustment as per actual. The BOP spares cap was revised to US$ 7.5 million and US$5.92 million for Balloki and HBS projects respectively. In line with those projects, the Authority has decided to revise the maximum cap to US$ 7.5 million as per signed O&M Agreement in the instant case subject to its adjustment as per actual.

8.38. As regards the mobilization period, there is no mention of 3 months mobilization period in the O&M Agreement. As per the PPA, the scheduled COD date was 20th December 2017 (actual 20th May 2018). QATPL vide email dated 5th December 2019 submitted details of fixed monthly fee during the mobilization period w.e.f. 16th October 2017. Accordingly, an amount of US$ 1,080,646 was paid during this period on account of fixed monthly fee along with initial fee of US$ 2 million. The total mobilization fee therefore, works out US$ 3,080,646. Accordingly, the Authority has decided to allow the same instead of previously approved mobilization cost of US$ 6 million. Appropriate adjustment shall be made at the time of COD in the project cost.

Whether the requested Testing and Commissioning cost as per actual is justified?

8.39. According to the Petitioner, through its earlier Petition, the Authority was requested to approve USD 29.634 million on account of testing and commissioning cost, based on the technical assessment carried out by its advisors. According to the Petitioner, the Authority allowed a substantially reduced amount of USD 10.87 million on account of testing and commissioning cost.

8.40. The Petitioner submitted that the Authority has approved the tariff on dual fuel but restricted the Petitioner from conducting test of 8 days on HSD. The Petitioner requested to allow much

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

necessary pre and post synchronization tests of the Gas Turbines on HSD to assess reliability and efficiency of the complex.

8.41. The Petitioner further submitted that in the post determination scenario, as the Petitioner has achieved the COD of the plant, the Company cannot manage the testing and commissioning costs within the NEPRA Determined cost due to the following reasons:

- HSD testing on H-Class machines is being conducted first time and no precedence and or profile for estimate was available and actual cost are exceeding estimates.
- Initially, software adjustments took a lot of time and caused increased fuel cost.
- Testing and commissioning efficiencies are based on combined cycle plant operation whereas in actual testing is being conducted sometime in simple cycle and sometime in combine cycle mode on part loads without having any reference to the fuel consumed to the ramp up of the unit up to the optimal output/efficiency. Hence the differential in the recovery of fuel cost has increased.

8.42. In the light of the above, QATPL requested the Authority to allow testing and commissioning cost as per actual.

8.43. The Petitioner was asked vide letter No. NEPRA/SAT/TRF-347/QATPL/3769 dated 9th March 2019 for supporting evidence regarding verification of the cost of fuel on RLNG and HSD fuels during testing prior to COD under the following heads:

i. Verified NEOs by CPPAG;
ii. Invoices of the fuel suppliers;
iii. Details of successful and unsuccessful testing;
iv. Back feed of electricity from the grid;
v. Capacity and Efficiency of the GTs on open cycle on both fuels;
vi. Capacity and Efficiency of the complex on both fuels;
vii. Loading profile of the GTs on open cycle on both fuels;
viii. Loading profile of the complex on both fuels;
ix. Part load correction factors as per PPA based on OEM curves;
x. Responsibilities of Employer and Contractor as per EPC contract;
xi. Standard Testing Duration as per approved PPA's of gas based IPPs;
xii. Comparison with comparable gas based IPPs regarding non recoverable fuel during testing;
xiii. Comparison with regional and international benchmarks regarding non recoverable fuel during testing.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

8.44. The Petitioner replied vide letter No. QATPL/CEO/3686/2019 dated April 23, 2019 which was found unsatisfactory. QATPL was asked vide email dated May 27, 2019 for information under the following heads:

i. Details about claimed fuel during testing prior to COD i.e. May 20, 2018:

Description	Unit (kWh)	Unit (MMBTUs/ Litres)	Unit (PKR)	Unit (USD)
Cost of RLNG Excluding GST	-	-		
Volume of RLNG	-		-	-
Cost of HSD Excluding GST	-	-		
Volume of HSD	-		-	-
Net units delivered to CPPAG		-	-	-
Volume of RLNG/HSD consumed for production of units - delivered to CPPAG	-		-	-
Cost of Units delivered to CPPAG	-	-		
Unrecovered RLNG/HSD cost Excluding GST	-	-		
Cost of RLNG Excluding GST for Successful Tests	-	-		
Volume of RLNG for Successful Tests	-		-	-
Cost of HSD Excluding GST for Successful Tests	-	-		
Volume of HSD for Successful Tests	-		-	-
Cost of RLNG Excluding GST for Un Successful Tests	-	-		
Volume of RLNG for Un Successful Tests	-		-	-
Cost of HSD Excluding GST for Un Successful Tests	-	-		
Volume of HSD for Un Successful Tests	-		-	-

ii. Details about successful/unsuccessful tests may be provided in view of the EPC contract. As per clause 4.19 of the EPC contract, the company (Employer) is only responsible for fuel consumed during successful tests whereas for unsuccessful tests Harbin Electric (contractor) is responsible for fuel provision. Clearly highlight the penalty/LD's imposed (if any) by the company on the EPC contractor owing to unsuccessful tests.

8.45. In response, QATPL vide email dated June 20, 2019, informed NEPRA that the comments would be provided shortly which, however, were never filed till date. In view of above and in absence of supporting documents, the Authority has decided to maintain its earlier decision in the matter.

Whether the requested CPP Component for HSD fuel tariff based on the net HSD output of 1,039.980 MW is justified?

8.46. According to the Petitioner, the Capacity Purchase Price (CPP) component of the Tariff on HSD fuel was mistakenly petitioned and accordingly determined based on the Net Output of RLNG fuel i.e. 1,156.675 MW instead the Net Output of HSD fuel i.e. 1,039.980 MW. The

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Petitioner requested to consider and allow the CPP component for HSD operation of the plant on the basis of Net HSD Output of 1,039.980 MW.

8.47. It is to be noted that at the time of determination of tariff of the original petition, the Petitioner did not request the capacity charges on the basis of HSD net dependable capacity and accordingly, the capacity charges were determined on the basis of net dependable capacity of RLNG in line with gas based power plants. The Authority has recently allowed capacity charges on net dependable capacity on HSD operations in two other similar power projects. The request of the Petitioner is justified. Accordingly, the Authority has decided to accept the same and revised the capacity charges on the basis of guaranteed net dependable capacity of 1,039.98 MW on HSD operations.

<u>Whether the requested output degradation and part load adjustment on Variable O&M Component is justified?</u>

8.48. According to the Petitioner, variable O&M cost comprises LTSA and O&M operator fees denominated in foreign currency. The Variable O&M cost component in the tariff petition has been computed based on net output of 1,156.675 MW as a static number. According to the Petitioner, annual output degradation is expected to gradually reduce the net output of the plant over the tariff control period. According to the Petitioner, as a natural consequence, the actual variable costs are bound to be higher than the respective Variable O&M amounts to be recovered under the tariff, thus exposing the Petitioner to a continuing loss. According to the Petitioner, the estimated loss over the Control Period is USD 7.4 million.

8.49. The Petitioner further submitted that as per its tariff determination, part load correction factor on Variable O&M Component is not allowed and O&M cost is subject to actualization based on the signed agreements. According to the Petitioner, it has entered into the LTSA with GT OEM i.e. General Electric (GE) wherein the variable fee to the LTSA Contractor is based on the Factored Fired Hours (FFH) of the Gas Turbines and the recovery under tariff against the same is through kWh generation. According to the Petitioner, in case the power plant is despatched on the part load operation during operational phase by Power Purchaser, Company will incur losses under the LTSA payments payable to the LTSA Contractor as FFH of Gas Turbines remains same even when Gas Turbines are operated on the part load. The Petitioner requested the Authority to allow the degradation factor and the part load effect to be applied on the Variable O&M Component.

8.50. CPPA-G in its comments submitted that the variable O&M component for all project is paid without applying any Part Load effect, which is admissible only in case of Fuel Cost Component. As such, there is technically no reason for allowing Part Load Adjustment Correction nor any precedence is available in this regard.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

8.51. While analysing the request of the petitioner following items have been consulted / reviewed by the technical team:

i. Impact on variable O&M component owing to output degradation and partial loading of GT's;

ii. Technical reports as prepared by international consultants;

iii. Adjustments / compensations as available in other gas based power plants in their respective power purchase agreements (PPA's);

iv. Base load operation of QATPL;

v. Incentives already allowed to QATPL.

8.52. It is noted that the output degradation and partial loading of GT's may have a minor impact on variable O&M component during the project life. However, the technical reports as published by international consultants show that in the presence of major adjustments like degradation (output & heat rate) and partial loading there is no need to allow more minor adjustments for the power plants as these are well manageable. Furthermore, it may be noted that NEPRA did not allow the requested adjustments to any other gas based power plant operating in the system. It would be pertinent to mention that the Authority has already rejected the similar request in the case of three identical RLNG based power plants and none of the other IPPs have ever claimed part load and output degradation adjustment on variable O&M. Therefore, the Authority has decided to decline the request of the Petitioner on this account.

<u>Whether the request to allow Engineering and Consultancy Cost as per actual is justified?</u>

8.53. According to the Petitioner, the Authority allowed US$ 10 million under the head of Engineering & Consultancy Cost. According to the Petitioner, the Engineering and Consultancy costs were allowed without considering the escalation of 12% per annum (local) and 4% per annum (Foreign), and also the exchange rate devaluations during the construction period as envisaged in the Consultancy Contract that impacted the foreign sub-consultancy costs substantially. The Petitioner also submitted that the consultancy cost is also expected to rise due to additional/continued services of the consultants due to extension in the construction period. The Petitioner requested the Authority to consider and allow the engineering and consultancy costs at actual.

8.54. On inquiry by NEPRA, QATPL on March 09, 2019 submitted details of Engineering and Consultancy contract and the same is reproduced below:

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

[illegible] Engineering and Consultancy contract prices - Annex [illegible]

NESPAK extension: (Rs)	original contract	1st amendment	2nd amendment	[illegible]
Nespak - taxes	663,029,588	588,712,529	750,235,447	790,064,755
CSP	30,728,3[illegible]	25,710,500	25,710,500	25,710,500
[illegible]	172,810,998	172,810,998	191,996,574	191,996,574
[illegible]	7,82[illegible]	6,437,088	6,437,088	6,437,088
LY financial	46,[illegible]	[illegible]	45,242,445	45,242,445
HMC[illegible]	[illegible]	[illegible],765,667	36,468,667	36,468,667
LY tax	[illegible]	5,875,000	5,875,000	6,869,000
Total contract price	963,446,886	867,812,782	1,061,915,721	1,102,789,029

8.55. As per the company, it has actually incurred the above referred cost i.e. USD 10.50 million (1 USD 105 PKR) which is 0.5 million higher than NEPRAs initial estimates i.e. USD 10 million (which was not a capped amount).The company did not provide any evidence in support of its claim.

8.56. The Authority has considered the request of the Petitioner. The Petitioner has itself submitted that the consultancy cost is also expected to rise due to additional/continued services of the consultants due to extension in the construction period. The Authority has already declined the extension in the construction period and approval of additional costs. Accordingly, the Authority has decided to maintain its earlier decision in the matter.

Whether the request to allow Insurance Cost during Operations as per actual without capping at 1% of the EPC cost is justified?

8.57. According to the Petitioner, the Authority allowed 1% of the EPC cost as Insurance cost to QATPL in the Tariff Petition. The Petitioner further submitted that the Authority, in the past, allowed insurance cost at 1.35% of the EPC cost to other power projects i.e. Halmore Power, Sapphire Electric etc. According to the Petitioner, QATPL opted for an advanced technology in the procurement of the Plant and with aggressive negotiations achieved lowest per MW EPC cost which is USD 0.456 Million per MW as compared to other Power Projects where EPC cost was around USD 1 Million per MW.

8.58. According to the Petitioner, Insurance premium is charged on the insured amount by the Insurance Companies rather than EPC cost paid by the Company. According to the Petitioner, the insured amount is the project cost which, in addition to the EPC Cost, includes many non-EPC costs such as taxes & duties, freight charges, item not covered under EPC (BOP spares, flood protection work and Training centre etc. According to the Petitioner, the company being a government owned entity is legally bound to obtain operational phase insurance quotes through National Insurance Company Limited (NICL) through competitive bidding process carried out by NICL. According to the Petitioner, the best insurance premium secured by NICL for Bhikki project after two rounds of bidding which was much higher than 1% of the EPC

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Cost exclusive of Federal Excise Duty and Federal Insurance Fee. According to the Petitioner, despite serious and repeated efforts of the Company and NICL, the premium could not be brought down any further.

8.59. According to the Petitioner, the Authority will appreciate that the EPC Cost of Bhikki project is unprecedentedly low as compared to other likewise projects already installed in Pakistan. According to the Petitioner, the insurance underwriters do not give any concession to the Insured party because of the lower EPC cost or the Capex as the premium quoted is a function of the operational risks of the power plants. Hence the maximum insurance premium allowed to Bhikki Project i.e. 1% of the EPC cost has rendered the Bhikki plant incapable of obtaining insurance cover. On the contrary, such a low cost of insurance premium allowed to Bhikki Project has in-fact amounted to undue penalizing of Bhikki project for setting up the most efficient power project with lowest ever EPC cost in the country.

8.60. According to the Petitioner, in view of the above submissions and the fact that the insurance market at present is a Seller's market with relatively lesser risk appetite of the Reinsurers / underwriters, it is impossible for QATPL to procure operational phase Insurance with the limitation of 1% premium cost of total EPC cost. The Petitioner requested to allow the actual cost of insurance premium paid during operational period, supported by the documentary evidence.

8.61. CPPA-G in its comments submitted that presently, the insurance rates are on declining trend. For example, M/s. Foundation Power (Dharki) Ltd was allowed insurance component @ 1.35% of EPC cost in Reference Tariff which has been revised @ 0.50% of the EPC cost in FY 2018-19. Similarly, M/s. Laraib Energy Ltd was allowed Rs. 0.2526 subject to maximum of 1% of the EPC cost (Exchange Rate Rs. 96.13/USD) in Reference Tariff, which has now reduced to Rs. 0.1673/kW/H our for 2017-18. CPPA has observed that substantial room is available for negotiating insurance policies through engaging international mediators/ brokers. Therefore, even 1% of the EPC cost allowed by NEPRA is on the higher side considering prevailing market conditions.

8.62. It is pertinent to mention that the Authority had previously allowed insurance during operations at 1.35% of the EPC. However, actual information submitted by IPPs revealed that insurance is below 1% of the EPC cost. Accordingly, the Authority revised the benchmark from 1.35% to 1%. Keeping in view declining trend of the current insurance market, the Authority has further revised the benchmark to 0.7% of EPC Cost during operation vide Guidelines dated June 19, 2018.

8.63. The request of the Petitioner primarily relates to the fact that it is a public sector entity and is required to obtain insurance from public insurance company. It may be pertinent to mention here that the Authority has never approved a different insurance benchmark for the public sector projects. In a similar public sector project, the Authority allowed the same 1% of EPC

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

benchmark as insurance during operations with the directions to carry out competitive bidding for procurement of insurance.

8.64. Therefore, the Authority has decided to maintain its earlier decision in the matter with the direction that the Petitioner shall carry out competitive bidding for procurement of insurance during operations.

Degradation and Part load Adjustments:

8.65. The adjustments like part load, degradation (output & heat rate) and start-up costs etc, which are impacting/influencing the generation tariff of the company shall be considered by the Authority at COD stage tariff based on correction curves of the complex specified by the OEM/EPC contractor on its letter head. CPPA-G is directed to continue to pay on account of Output Degradation Factor, Heat Rate Degradation Factor and Part Load Adjustment Correction as per the terms of the PPA agreed between the parties till final approval of the Authority in the matter.

Combined Cycle Tariff Table

8.66. Based on the above, the combined cycle tariff on RLNG and the revised combined cycle tariff on HSD net output are as follows:

Description	1,156.67 MW **RLNG**	1,039.98 MW **HSD**
Energy Charge (Rs./kWh):		
Fuel cost component	4.5101	8.4527
Variable O&M	0.3169	0.4572
Total	**4.8270**	**8.9099**
Capacity Charge (Rs./kW/hour):		
Fixed O&M (Local)	0.0647	0.0720
Fixed O&M (Foreign)	0.1453	0.1616
Cost of working capital	0.0970	0.1079
Insurance	0.0574	0.0638
Return on Equity	0.4481	0.4984
Debt servicing (1-10 years only)	0.9281	1.0322
Total 1-10 years	1.7405	1.9358
Total 11-30 years	0.8125	0.9037
Avg. Tariff 1-10 years @ 92% (Rs./kWh)	6.7189	11.0141
Avg. Tariff 11-30 years @ 92% (Rs./kWh)	5.7101	9.8921
Levelized tariff (Rs./kWh)	**6.3676**	**10.6234**
Levelized tariff (Cents/kWh)	**6.0644**	**10.1176**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

9. ORDER

I. The Authority hereby determines and approves the following generation tariff for Quaid-e-Azam Thermal Power (Private) Limited for its combined cycle power project at Bhikki, Sheikhupura on the basis of net power output of 1,156.675 MW on RLNG and 1039.98 MW on HSD along with adjustments/indexations for delivery of electricity to the power purchaser:

Combined Cycle Operation

Tariff Components	RLNG	HSD	Indexation/Adjustment
Capacity Charges (Rs./kW/hr):			
Fixed O&M (Local)	0.0647	0.0720	CPI (General)
Fixed O&M (Foreign)	0.1453	0.1616	US CPI &Rs./US$
Cost of working capital	0.0970	0.1079	KIBOR and Fuel Price
Insurance	0.0574	0.0638	Actual subject to maximum limit
ROE	0.4481	0.4984	Rs./US$
Debt Servicing (Years 1-10 only)	0.9281	1.0322	KIBOR
Total 1-10 Years	**1.7405**	**1.9358**	
Total 11-30 Years	**0.8125**	**0.9037**	
Energy Charge (Rs./kWh):			
Fuel cost Component	4.5101	8.4527	Fuel Price
Variable O&M (Foreign)	0.3169	0.4572	US CPI &Rs./US$
Total	**4.8270**	**8.9099**	

The Reference Tariff Tables and Debt Service Schedule are attached as Annexures to this determination

II. One Time Adjustment of at COD

i) Since the exact timing of payment to EPC contractor is not known at this point of time, therefore, an adjustment for relevant foreign currency fluctuation for the US$ 424.02 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.

ii) Adjustment as per actual with maximum of US$ 12.74 million for items outside the scope of the EPC contract except for BOB spares along with currency fluctuation for dollar portion, if any.

iii) BOP Spares shall be adjusted as per actual on the basis of signed O&M Agreement with maximum cap of USD 7.5 million instead of US$ 1.71 million previously approved.

iv) The Customs Duties and Cess of US$ 25.653 million shall be adjusted as per actual.

v) Adjustment as per actual O&M mobilization cost of US$ 3,080,646 against US$ 6 million previously approved.

NEPRA AUTHORITY
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

vi) Adjustment as per actual with maximum of US$ 8.257 million for Security & Surveillance cost.

vii) Adjustment as per actual with maximum of US$ 10.508 million for Administrative cost.

viii) Subscriptions fees and charges pertaining to SECP, PPIB and NEPRA on actual basis with maximum cap of Rs. 230.107 million as part of the project cost duly supported by verifiable documentary evidence in addition to the above capped administrative cost.

ix) Actual pre-NTP administrative cost for a period of approximately 5-6 months subject to maximum of Rs. 31,543,280/- on the basis of verifiable documentary evidence shall also be included in the administrative cost in addition to the above capped administrative cost.

x) Adjustment as per actual with maximum of US$ 13.60 million for gas pipeline cost.

xi) Adjustment as per actual of Escrow Account on the basis of revised RLNG price and applicable GST.

xii) Adjustment as per actual of US$ 18.448 million for Financing Fees & Charges subject to maximum of 3.5% of the debt amount.

xiii) 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.

xiv) ROE component of tariff shall be adjusted for variation in actual equity investment and actual equity drawdown.

xv) O&M components shall be adjusted as per the signed O&M Agreement, LTSA Agreement and actual recurring administrative expenses.

III. Adjustment due to Variation in Net Capacity

The reference tariff has been determined on the basis of guaranteed net capacity of 1,156.675 MW (1,039.98 on HSD operations) with auxiliary consumption of 1.99% (23.455 MW). All the tariff components of capacity charge shall be adjusted at the time of COD based upon the Initial Dependable Capacity (IDC) tests to be carried out for determination of net contracted capacity. In case net capacity is established lower than the guaranteed level, maximum 3% of the auxiliary consumption shall be allowed and appropriate adjustment in the tariff components shall be made after adjusting LDs as per Schedule 10 to the EPC contract against the project cost.

IV. Heat Rate Test

The energy charge part of the tariff relating to fuel cost shall be adjusted subsequent to the heat rate test carried out by the independent engineer in the presence of representatives of power purchaser in accordance with the established benchmarks. Subsequent to the submission of the test report to the satisfaction of the Authority, onetime adjustment shall be made in the fuel cost components.

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. In case the efficiencies on either fuel establish higher

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

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.

V. 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 the following formula:

AIC		$Ins_{(Ref)} / P_{(Ref)} * P_{(Act)}$
Where		
AIC		Adjusted Insurance Component of Tariff
$Ins_{(Ref)}$		Reference Insurance Component of Tariff
$P_{(Ref)}$		Reference Premium US$ 5.537million at Rs. 105/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

VI. 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 exchange rate of Rs. 105/US$

ii) Indexation applicable to O&M

At COD, O&M components shall be adjusted as per the signed O&M Agreement, LTSA Agreement and actual recurring administrative expenses. Thereafter, 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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

available information with respect to CPI notified by the Pakistan Bureau of Statistics (PBS), US CPI (All Urban Consumers) 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
$F\ F.\ O\&M_{(REV)}$	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 202.98 for February 2016
$US\ CPI_{(REV)}$	The revised US CPI (All Urban Consumers)
$US\ CPI_{(REF)}$	The reference US CPI of 237.111 for February 2016
$ER_{(REV)}$	The revised TT & OD selling rate of US dollar
$ER_{(REF)}$	The reference exchange rate of RS. 105/US$

iii) <u>Indexation for KIBOR Variation</u>

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	$P_{(REV)} * (KIBOR_{(REV)} - 6.36\%) / 4$
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 <6.36%. 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 1st installment is due after availing the grace period.

iv) <u>Cost of Working Capital</u>

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.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

VII. Fuel Price Adjustment

The fuel cost component of tariff subsequent to adjustment of heat rate test at COD 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$ 7/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. 46.2134/litre.

VIII. Terms & Conditions

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

i) All plant and equipment shall be new and shall be designed, manufactured and tested in accordance with the acceptable standards.

ii) The verification of the new machinery will be done by the independent engineer at the time of the commissioning of the plant duly verified by the power purchaser.

iii) The tariff has been determined on the basis of debt equity ratio of 75:25. 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.

iv) Interest income, if any, on Escrow Account shall be credited to the power purchaser through adjustment against the outstanding payments.

v) Any payment on account of WWF, WPPF and turnover tax on the interest income during the construction period shall be netted off against such income and net proceeds shall be treated as deductible at the time of COD Adjustment.

vi) The plant availability shall be 92%.

vii) The tariff control period shall be 30 years from the date of commercial operation.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

viii) The simple cycle tariff on unit delivered basis on RLNG fuel shall only be applicable during the availability of the gas turbines for simple cycle operation for 8-9 months before the COD of the complex on combined cycle operation.

ix) The dispatch will be at appropriate voltage level mutually agreed between the power purchaser and the power producer.

x) The dispatch shall be in accordance with economic merit order.

xi) 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.

xii) Taxes and duties on the import of plant & machinery during the construction period have been included in the project cost and shall be adjusted on actual at the time of COD on the basis of verifiable documentary evidence.

xiii) This tariff determination shall supersede the interim tariff issued on 22nd February 2016.

xiv) General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the Power Purchase Agreement.

10. NOTIFICATION

10.1. 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 15.1.2020 Member	Rehmatullah Baloch 15/1/2020 Member
— Rafique Ahmed Shaikh Member	— Engr. Bahadur Shah Member

Tauseef H. Farooqi
Chairman

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

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Annex-I

Quaid-e-Azam Thermal Power (Pvt) Limited
Refrence Tariff Table RLNG

Year	Energy Purchase Price (Rs./kWh)			Capacity Purchase Price (PKR/kW/Hour)									Total Tariff	
	Fuel	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	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.3810	0.5470	1.7405	1.8919	6.7189	6.3989
2	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.4180	0.5101	1.7405	1.8919	6.7189	6.3989
3	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.4585	0.4696	1.7405	1.8919	6.7189	6.3989
4	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.5029	0.4251	1.7405	1.8919	6.7189	6.3989
5	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.5517	0.3764	1.7405	1.8919	6.7189	6.3989
6	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.6052	0.3229	1.7405	1.8919	6.7189	6.3989
7	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.6638	0.2642	1.7405	1.8919	6.7189	6.3989
8	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.7282	0.1999	1.7405	1.8919	6.7189	6.3989
9	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.7988	0.1293	1.7405	1.8919	6.7189	6.3989
10	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.8762	0.0519	1.7405	1.8919	6.7189	6.3989
11	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
12	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
13	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
14	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
15	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
16	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
17	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
18	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
19	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
20	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
21	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
22	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
23	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
24	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
25	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
26	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
27	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
28	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-		0.8125	0.8831	5.7101	5.4382
29	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
30	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	-	-	0.8125	0.8831	5.7101	5.4382
Average														
1-10	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.5984	0.3296	1.7405	1.8919	6.7189	6.3989
11-30	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.0000	0.0000	0.8125	0.8831	5.7101	5.4382
1-30	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.1995	0.1099	1.1218	1.2194	6.0464	5.7585
Levelized														
1-30	4.5101	0.3169	4.8270	0.0647	0.1453	0.0970	0.0574	0.4481	0.3629	0.2420	1.4174	1.5407	**6.3676**	**6.0644**

6.3676 Rs./kWh **6.0644 US Cents/kWh**

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Annex-II

Quaid-e-Azam Thermal Power (Pvt) Limited
Reference Tariff Table HSD

Year	Energy Purchase Price (Rs./kWh)			Capacity Purchase Price (PKR/kW/Hour)									Total Tariff	
	Fuel	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	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.4238	0.6084	1.9358	2.1042	11.0141	10.4896
2	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.4649	0.5673	1.9358	2.1042	11.0141	10.4896
3	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.5099	0.5222	1.9358	2.1042	11.0141	10.4896
4	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.5594	0.4728	1.9358	2.1042	11.0141	10.4896
5	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.6136	0.4186	1.9358	2.1042	11.0141	10.4896
6	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.6731	0.3591	1.9358	2.1042	11.0141	10.4896
7	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.7383	0.2939	1.9358	2.1042	11.0141	10.4896
8	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.8099	0.2223	1.9358	2.1042	11.0141	10.4896
9	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.8884	0.1438	1.9358	2.1042	11.0141	10.4896
10	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.9745	0.0577	1.9358	2.1042	11.0141	10.4896
11	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
12	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
13	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
14	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
15	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
16	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
17	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
18	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
19	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
20	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
21	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
22	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
23	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
24	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
25	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
26	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
27	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
28	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
29	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
30	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	-	-	0.9037	0.9822	9.8921	9.4211
Average														
1-10	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.6656	0.3666	1.9358	2.1042	11.0141	10.4896
11-30	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.0000	0.0000	0.9037	0.9822	9.8921	9.4211
1-30	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.2219	0.1222	1.2477	1.3562	10.2661	9.7773
Levelized														
1-30	8.4527	0.4572	8.9099	0.0720	0.1616	0.1079	0.0638	0.4984	0.4036	0.2692	1.5765	1.7135	**10.6234**	**10.1176**

Levelized Tariff = 10.6234 Rs./kWh 10.1176 US Cents/kWh

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Quaid-e-Azam Thermal Power (Pvt) Limited
Debt Service Schedule- RLNG Operations

Gross Capacity	1180.13	MWs	PKR/US$ Parity	105.00	
Net Capacity	1156.68	MWs	Debt	577.48	US$ Million
KIBOR	6.36%		Debt in Pak Rupees	60,635.61	Rs. Million
Spread over KIBOR	3.00%				
Total Interest Rate	9.36%				

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	60,635.61	931.99	1,418.87	59,703.62	2,350.86			
2	59,703.62	953.80	1,397.06	58,749.82	2,350.86			
3	58,749.82	976.12	1,374.75	57,773.71	2,350.86			
4	57,773.71	998.96	1,351.90	56,774.75	2,350.86	0.3810	0.5470	0.9281
1st Year		3,860.86	5,542.59		9,403.45			
5	56,774.75	1,022.33	1,328.53	55,752.42	2,350.86			
6	55,752.42	1,046.26	1,304.61	54,706.16	2,350.86			
7	54,706.16	1,070.74	1,280.12	53,635.42	2,350.86			
8	53,635.42	1,095.79	1,255.07	52,539.63	2,350.86	0.4180	0.5101	0.9281
2nd Year		4,235.12	5,168.33		9,403.45			
9	52,539.63	1,121.43	1,229.43	51,418.20	2,350.86			
10	51,418.20	1,147.68	1,203.19	50,270.52	2,350.86			
11	50,270.52	1,174.53	1,176.33	49,095.99	2,350.86			
12	49,095.99	1,202.02	1,148.85	47,893.97	2,350.86	0.4585	0.4696	0.9281
3rd Year		4,645.66	4,757.79		9,403.45			
13	47,893.97	1,230.14	1,120.72	46,663.83	2,350.86			
14	46,663.83	1,258.93	1,091.93	45,404.90	2,350.86			
15	45,404.90	1,288.39	1,062.47	44,116.51	2,350.86			
16	44,116.51	1,318.54	1,032.33	42,797.98	2,350.86	0.5029	0.4251	0.9281
4th Year		5,095.99	4,307.45		9,403.45			
17	42,797.98	1,349.39	1,001.47	41,448.59	2,350.86			
18	41,448.59	1,380.96	969.90	40,067.63	2,350.86			
19	40,067.63	1,413.28	937.58	38,654.35	2,350.86			
20	38,654.35	1,446.35	904.51	37,208.00	2,350.86	0.5517	0.3764	0.9281
5th Year		5,589.98	3,813.46		9,403.45			
21	37,208.00	1,480.19	870.67	35,727.80	2,350.86			
22	35,727.80	1,514.83	836.03	34,212.97	2,350.86			
23	34,212.97	1,550.28	800.58	32,662.69	2,350.86			
24	32,662.69	1,586.55	764.31	31,076.14	2,350.86	0.6052	0.3229	0.9281
6th Year		6,131.86	3,271.59		9,403.45			
25	31,076.14	1,623.68	727.18	29,452.46	2,350.86			
26	29,452.46	1,661.67	689.19	27,790.78	2,350.86			
27	27,790.78	1,700.56	650.30	26,090.22	2,350.86			
28	26,090.22	1,740.35	610.51	24,349.87	2,350.86	0.6638	0.2642	0.9281
7th Year		6,726.26	2,677.18		9,403.45			
29	24,349.87	1,781.07	569.79	22,568.80	2,350.86			
30	22,568.80	1,822.75	528.11	20,746.05	2,350.86			
31	20,746.05	1,865.40	485.46	18,880.64	2,350.86			
32	18,880.64	1,909.05	441.81	16,971.59	2,350.86	0.7282	0.1999	0.9281
8th Year		7,378.29	2,025.16		9,403.45			
33	16,971.59	1,953.73	397.14	15,017.86	2,350.86			
34	15,017.86	1,999.44	351.42	13,018.42	2,350.86			
35	13,018.42	2,046.23	304.63	10,972.19	2,350.86			
36	10,972.19	2,094.11	256.75	8,878.07	2,350.86	0.7988	0.1293	0.9281
9th Year		8,093.51	1,309.93		9,403.45			
37	8,878.07	2,143.11	207.75	6,734.96	2,350.86			
38	6,734.96	2,193.26	157.60	4,541.70	2,350.86			
39	4,541.70	2,244.59	106.28	2,297.11	2,350.86			
40	2,297.11	2,297.11	53.75	0.00	2,350.86	0.8762	0.0519	0.9281
10th Year		8,878.07	525.37		9,403.45			

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Annex-IV

Quaid-e-Azam Thermal Power (Pvt) Limited
Debt Service Schedule- HSD Operations

Gross Capacity	1180.13	MWs	PKR/US$ Parity	105.00	
Net Capacity	1039.98	MWs	Debt	577.48	US$ Million
KIBOR	6.36%		Debt in Pak Rupees	60,635.61	Rs. Million
Spread over KIBOR	3.00%				
Total Interest Rate	9.36%				

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	60,635.61	931.99	1,418.87	59,703.62	2,350.86			
2	59,703.62	953.80	1,397.06	58,749.82	2,350.86			
3	58,749.82	976.12	1,374.75	57,773.71	2,350.86			
4	57,773.71	998.96	1,351.90	56,774.75	2,350.86	0.4238	0.6084	1.0322
1st Year		**3,860.86**	**5,542.59**		**9,403.45**			
5	56,774.75	1,022.33	1,328.53	55,752.42	2,350.86			
6	55,752.42	1,046.26	1,304.61	54,706.16	2,350.86			
7	54,706.16	1,070.74	1,280.12	53,635.42	2,350.86			
8	53,635.42	1,095.79	1,255.07	52,539.63	2,350.86	0.4649	0.5673	1.0322
2nd Year		**4,235.12**	**5,168.33**		**9,403.45**			
9	52,539.63	1,121.43	1,229.43	51,418.20	2,350.86			
10	51,418.20	1,147.68	1,203.19	50,270.52	2,350.86			
11	50,270.52	1,174.53	1,176.33	49,095.99	2,350.86			
12	49,095.99	1,202.02	1,148.85	47,893.97	2,350.86	0.5099	0.5222	1.0322
3rd Year		**4,645.66**	**4,757.79**		**9,403.45**			
13	47,893.97	1,230.14	1,120.72	46,663.83	2,350.86			
14	46,663.83	1,258.93	1,091.93	45,404.90	2,350.86			
15	45,404.90	1,288.39	1,062.47	44,116.51	2,350.86			
16	44,116.51	1,318.54	1,032.33	42,797.98	2,350.86	0.5594	0.4728	1.0322
4th Year		**5,095.99**	**4,307.45**		**9,403.45**			
17	42,797.98	1,349.39	1,001.47	41,448.59	2,350.86			
18	41,448.59	1,380.96	969.90	40,067.63	2,350.86			
19	40,067.63	1,413.28	937.58	38,654.35	2,350.86			
20	38,654.35	1,446.35	904.51	37,208.00	2,350.86	0.6136	0.4186	1.0322
5th Year		**5,589.98**	**3,813.46**		**9,403.45**			
21	37,208.00	1,480.19	870.67	35,727.80	2,350.86			
22	35,727.80	1,514.83	836.03	34,212.97	2,350.86			
23	34,212.97	1,550.28	800.58	32,662.69	2,350.86			
24	32,662.69	1,586.55	764.31	31,076.14	2,350.86	0.6731	0.3591	1.0322
6th Year		**6,131.86**	**3,271.59**		**9,403.45**			
25	31,076.14	1,623.68	727.18	29,452.46	2,350.86			
26	29,452.46	1,661.67	689.19	27,790.78	2,350.86			
27	27,790.78	1,700.56	650.30	26,090.22	2,350.86			
28	26,090.22	1,740.35	610.51	24,349.87	2,350.86	0.7383	0.2939	1.0322
7th Year		**6,726.26**	**2,677.18**		**9,403.45**			
29	24,349.87	1,781.07	569.79	22,568.80	2,350.86			
30	22,568.80	1,822.75	528.11	20,746.05	2,350.86			
31	20,746.05	1,865.40	485.46	18,880.64	2,350.86			
32	18,880.64	1,909.05	441.81	16,971.59	2,350.86	0.8099	0.2223	1.0322
8th Year		**7,378.29**	**2,025.16**		**9,403.45**			
33	16,971.59	1,953.73	397.14	15,017.86	2,350.86			
34	15,017.86	1,999.44	351.42	13,018.42	2,350.86			
35	13,018.42	2,046.23	304.63	10,972.19	2,350.86			
36	10,972.19	2,094.11	256.75	8,878.07	2,350.86	0.8884	0.1438	1.0322
9th Year		**8,093.51**	**1,309.93**		**9,403.45**			
37	8,878.07	2,143.11	207.75	6,734.96	2,350.86			
38	6,734.96	2,193.26	157.60	4,541.70	2,350.86			
39	4,541.70	2,244.59	106.28	2,297.11	2,350.86			
40	2,297.11	2,297.11	53.75	0.00	2,350.86	0.9745	0.0577	1.0322
10th Year		**8,878.07**	525.37		**9,403.45**			

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