F/A

5 B/3, Gulberg III
Lahore 54660, Pakistan
UAN +92 42 111 152 726
PABX +92 42 3577 2912-21
Fax +92 42 3577 2922

Ref: KAPCO /CEO/2023/471

March 08, 2023

DG (RD)

Forwarded please:

☑ For nec action	☑ for information
1. DG (Lic.)	2. DG (Admn./HR)
3. DG (M&E)	4. DG (CAD)
5. ADG (Trf.)	6. Dir. (Fin.)
7. Dir. (Tech.)	8. Consultant
9. LA	10. Addl. Dir. (IT)

For kind information please:
1. Chairman
2. M (Tech.)
3. M (Lic.)
4. M (Trf. & Fin)
5. M (Law)

REGISTRAR OFFICE
Diary No: 298
Date: 08/3/23

The Registrar,
National Electric Power Regulatory Authority,
NEPRA Tower, Ataturk Avenue-East G-5/1,
Islamabad.

Subject: TARIFF PETITION FOR REFERENCE GENERATION TARIFF AND SWITCHYARD FACILITY CHARGES - KOT ADDU POWER COMPANY LIMITED

Dear Sir,

1. We, **MUHAMMAD RABNAWAZ ANJUM**, the Chief Financial Officer/ General Manager (Finance) and **A. ANTHONY RATH**, the Company Secretary/ General Manager (Legal) of Kot Addu Power Company Limited, being the duly Authorized Representatives of **KOT ADDU POWER COMPANY LIMITED** (a company duly established and existing under the laws of Pakistan with its registered office located at Office No. 309, 3rd Floor, Evacuee Trust Complex, Agha Khan Road, F-5/1, Islamabad, Pakistan) (the "**Petitioner**") hereby submit:

   i. the application for Reference Generation Tariff and Switchyard Charges (the "**Tariff Petition**"), under the '*Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997*' (the "**NEPRA Act**") and the rules and regulations made thereunder including the NEPRA (Tariff Standards and Procedure) Rules, 1998 (the "**NEPRA Rules**") and the NEPRA (Electric Power Procurement) Regulations, 2022 (the "**2022 Procurement Regulations**") before the **NATIONAL ELECTRIC POWER REGULATORY AUTHORITY** (the "**Authority**") for the Authority's kind consideration and approval; and

   ii. the application for the grant of a provisional approval of Reference Generation Tariff and Switchyard Charges (the **"Provisional Tariff Application"**) pursuant to Rule 4(7) of NEPRA Rules, on an urgent basis, allowing the Petitioner to supply power to the power purchaser and making the switchyard facility available, during the period between the date of the Provisional Tariff Application approval till the time the Authority arrives at its final determination with regards to the Tariff Petition (the "**Interim Period**").

2. A copy of Pay Order No. 25614252 dated October 21, 2022 amounting to PKR 1,719,888/- (Pakistani Rupees One Million Seven Hundred Nineteen Thousand Eight Hundred Eighty-Eight only net of withholding tax of 8%) drawn in favour of the Authority, issued by Habib Bank Limited, is also enclosed herewith.

A. Anthony

Power Project
Kot Addu Power Complex
Kot Addu, District Muzaffargarh
Punjab - Pakistan
PABX +92 66 230 1041 - 49
Fax +92 66 230 1025

Registered Office
Office No. 309, 3rd Floor
Evacuee Trust Complex
Agha Khan Road, F 5/1
Islamabad, Pakistan

info@kapco.com.pk
www.kapco.com.pk

3. We certify that the documents-in-support attached with the Tariff Petition and Provisional Tariff Application are prepared and submitted in conformity with the prevailing provisions of the NEPRA Act and the NEPRA Rules. We further undertake and confirm that the information provided in the attached documents-in-support are true and correct to the best of my knowledge and belief.

4. In light of the submissions set out in the Tariff Petition and Provisional Tariff Application and the information attached to the same, the Authority is kindly requested to process the Tariff Petition and Provisional Tariff Application at the earliest, thereby enabling the Petitioner to proceed further with meeting the objects, as set out in therein.

Respectfully submitted,

FOR AND BEHALF OF:
KOT ADDU POWER COMPANY LIMITED

MUHAMMAD RABNAWAZ ANJUM
CHIEF FINANCIAL OFFICER /
GENERAL MANAGER (FINANCE)

A. ANTHONY RATH
COMPANY SECRETARY /
GENERAL MANAGER (LEGAL)

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5 B/3, Gulberg III
Lahore 54660, Pakistan
UAN +92 42 111 152 726
PABX +92 42 3577 2912-21
Fax +92 42 3577 2922

Ref: KAPCO/CEO/2023/472

F/A-7

Dated: March 08, 2023

ATTN:
THE REGISTRAR
National Electric Power Regulatory Authority
NEPRA Tower, Ataturk Avenue
G-5/1, Islamabad

Dear Sir,

SUBJECT: REQUEST FOR PROVISIONAL TARIFF APPROVAL

We, Kot Addu Power Company Limited (the "**Petitioner**"), write in furtherance of our Tariff Petition dated March 08, 2023, (the "**Tariff Petition**"). The Tariff Petition is being submitted before the National Electric Power Regulatory Authority (hereinafter "**NEPRA**" and/or the "**Authority**") for grant of a (i) reference generation tariff in respect of sale of electricity to Central Power Purchasing Agency Guarantee Limited (the "**Power Purchaser**" or "**CPPA-G**") from the Petitioner's 1600 MW thermal power generation facility (the "**Generation Facility**") located at Kot Addu District Muzaffargarh, Punjab, Pakistan (the "**Site**") and (ii) switchyard facility charges relating to the Petitioner's switchyard, which is being operated at 2 voltage levels i.e., 132 kV and 220 kV, located at the Site (the "**Switchyard Facility**"). The Generation Facility and the Switchyard Facility shall hereinafter collectively be referred to as the "**Facility**".

In view of the submissions contained herein below, the Petitioner hereby requests the Authority to grant a provisional approval of tariff (the "**Provisional Tariff Approval**"), allowing the Petitioner to supply power from the Generation Facility to the Power Purchaser and making the Switchyard Facility available, during the period commencing from the date of determination of Provisional Tariff Approval till the time that the Authority arrives at its final determination with regards to the Tariff Petition (the "**Interim Period**").

1. The Facility previously operated on the basis of the tariff provided under Schedule 6 of the Power Purchase Agreement ("**PPA**") dated June 27, 1996, as amended through a First PPA Amendment dated October 03, 2000, a Second PPA Amendment dated April 20, 2002 and a Third PPA Amendment dated February 11, 2021 (collectively the "**Original PPA**"). The Original PPA expired on October 24, 2022.

2. Since the Original PPA has expired and the Authority has yet to arrive at a final determination in respect of the Tariff Petition, the Petitioner is requesting the grant of the Provisional Tariff Approval for the Interim Period on the following basis:

Power Project
Kot Addu Power Complex
Kot Addu, District Muzaffargarh
Punjab - Pakistan
PABX +92 66 230 1041 - 49
Fax +92 66 230 1025

Registered Office
Office No. 309, 3rd Floor
Evacuee Trust Complex
Agha Khan Road, F 5/1
Islamabad, Pakistan

info@kapco.com.pk www.kapco.com.pk

i. Despite the Generation Facility not being operational since the expiry of the Original PPA, due to repeated insistence of the National Transmission & Dispatch Company Limited (the "**NTDC**") and directives of the Ministry of Energy, Power Division ("**MOE**"), the Switchyard Facility is being made available by the Petitioner to NTDC, which has resulted in the Petitioner incurring Switchyard Facility charges (including required return on equity) of PKR 303.2 million up until February 28, 2023. The Petitioner continues to incur additional Switchyard Facility charges on a day-to-day basis for making the Switchyard Facility available to NTDC.

ii. Furthermore, the Generation Facility ran as a base load plant and played a crucial role in supply of power to the local areas of Multan Electric Power Company ("**MEPCO**"), Peshawar Electric Supply Company ("**PESCO**") and Faisalabad Electric Supply Company ("**FESCO**"). In the absence of a tariff, the Petitioner cannot continue to play this crucial role in the supply of power to the aforementioned distribution companies. It is pertinent to highlight that MEPCO vide letter dated August 11, 2021, has supported the continued operations of the Facility to meet system requirements. Likewise, through a letter dated November 20, 2020, the system operator i.e., the National Power Control Centre ("**NPCC**") acknowledged that the Generation Facility is '*critically required*'.

Copies of the MEPCO's letter dated August 11, 2021, and NPCC's letter dated November 20, 2020 *are attached as* ***Annexure A and B,*** *respectively.*

iii. NTDC has also written a letter to the Petitioner dated October 17, 2022, pursuant to a meeting held at the MOE, regarding the expiry of the Original PPA. The meeting was attended by Additional Secretary-1 and other representatives of the MOE, NTDC and Central Power Purchasing Agency (Guarantee) Limited ("**CPPA-G**") to discuss the imperative need for continued operations of the Facility. Based on meeting discussions, NTDC, through its letter, has requested the Petitioner to "*ensure the availability of its 220/132kV switchyard and other ancillary services after expiry of its PPA on 24-10-2022 at 24:00Hrs*". NTDC has further stated in the letter that "*...availability of KAPCO grid will support smooth operation of 220/132kV network for continuity of power evacuation to MEPCO and associated region.*" Furthermore, in its notification for the approval for concurrence of Board of Directors dated December 07, 2022, NTDC "*approved the retention of the 500MW capacity from the KAPCO power plant (Block – I and Block – II) up to year 2025-26 beyond its PPA expiry on 24th October 2022, which is in line with the IGCEP 2022 and owing to the area network requirements/constraints. Moreover, the 220/132kV substation of KAPCO is required to feed the MEPCO network.*" It may be noted that in the absence of grant of Provisional Tariff Approval by the honorable Authority, the Petitioner cannot comply with NTDC's request and the Facility cannot be made available.

Copies of the NTDC letter dated October 17, 2022 and NTDC Notification dated December 07, 2022 are attached as ***Annexure C and D,*** *respectively.*

A. Aziz

KOT ADDU POWER COMPANY LIMITED

iv. The Facility also has a major role in the supply of electricity in emergency situations. It has a black-start facility (the "**Black-start Facility**") to support the system in case of country-wide blackout. Recently on January 23, 2023, the Petitioner was requested by NPCC/CPPA-G to support the system by making its Black-start Facility available; and directions were issued by the MOE to temporarily operate the Facility in the absence of a power purchase agreement to facilitate system restoration. The Petitioner supported the restoration of the system by sharing approximately 250 MW without having any contractual obligation with very short notice. The Petitioner has also been historically providing significant support to the system on numerous occasions whenever there was an emergency blackout. Therefore, it is in the best interest of the country that the Facility is allowed to be operational on the basis of the Provisional Tariff Approval in order to make its Black-start Facility available for supporting the system in case of any untoward emergency.

NTDC also wrote a letter dated January 25, 2023 to the Petitioner in which it recognised the effectiveness of the Facility and its support for system restoration by using the Black-start Facility. NTDC, through the same letter, advised the Petitioner and the Power Purchaser to expedite the process of entering into a power purchase agreement so that the Petitioner can carry on its services. Importantly, had the Original PPA been renewed in a timely manner, the Petitioner's units would have been available and would have supported the restoration of the system much more expeditiously and efficiently. This would have not only saved the country from a significant economic loss but would have also alleviated the stress and anxiety caused to the general public by such a protracted power shut-down. In order to avoid any uncertainty in the near future, it is crucial that the Facility be made operational through the grant of the Provisional Tariff Approval.

Copy of the NTDC's letter dated January 25, 2023 is attached as ***Annexure E.***

v. Another pressing reason for issuance of the Provisional Tariff Approval is the impending summer season. During summer, the local area network is likely to face an energy crisis since there is a possibility of overloading of the auto transformers due to the growing need of electricity especially in the MEPCO region. As done in previous years, the Facility will provide much needed electricity for meeting the demands of the local area networks. NTDC, through its letter dated December 22, 2022, substantiates that the Facility will be required in the upcoming excruciatingly hot weather of South Punjab to ensure smooth evacuation of power to MEPCO region through safe and reliable grid and network operations at optimum system parameters. Therefore, it is crucial for the Facility to become operational through the grant of this Provisional Tariff Approval.

Copy of the NTDC's letter dated *December 22, 2022 is attached as* ***Annexure F.***

vi. The Petitioner has a reasonable inventory of fuel stock (LSFO) of around 64,000 Metric Tonnes while around 40,000 Metric Tonnes is available with PSO, which was ordered under the Oil Supply Agreement and Power Purchaser's dispatch requirements under the Original PPA. This availability of imported fuel will not only support the system during the month of Ramadan on short notice but will also prevent any additional

KOT ADDU POWER COMPANY LIMITED

impact on the already depleted foreign reserves situation of the country. In case any alternative power producer is utilized for meeting the power requirements that power producer may have to import the fuel which will eventually burden the existing foreign reserves of the country. Therefore, it is crucial for the Facility to become operational through the grant of this Provisional Tariff Approval to lessen the additional requirement of import of fuel during upcoming months.

vii. The determination of tariff will require four months as provided under the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998. During the interim period, especially during the upcoming summer and the holy month of Ramadan when electricity is critically required without major load shedding, the Petitioner will not be able to provide the required generation in the absence of tariff or provisional tariff. Therefore, it is crucial for the Facility to become operational through the grant of this Provisional Tariff Approval.

3. Considering the urgent situation stated above and to fill in the gap of interruption of supply of power from the Generation Facility due to expiry of the Original PPA, we propose that the Provisional Tariff Approval for the Interim Period be kindly granted by the Authority for the Facility. The Provisional Tariff Approval may be based on the following two options, which are presented for consideration by the Authority:

(a) **Option 1:** The Authority permit (i) the Petitioner to invoice the Power Purchaser and the Power Purchaser be allowed to make payments to the Petitioner, on the basis of reference generation tariff proposed in the Tariff Petition and (ii) the Petitioner to invoice the Switchyard Facility charges and Power Purchaser be allowed to make payments to the Petitioner for the Switchyard Facility charges on the basis of the Tariff Petition; or

(b) **Option 2:** The Authority permit the Petitioner to invoice the Power Purchaser and the Power Purchaser be allowed to make payments to the Petitioner, on the basis of the original tariff of the Facility (i.e. the tariff provided under Schedule 6 of the Original PPA), with the exception that (i) the fuel cost component of the existing tariff is adjusted on the basis of the heat rates provided in Section 9 (*Energy Purchase Price – Plant 1*) and Section 11 (*Energy Purchase Price – Plant 2*) of the Tariff Petition, respectively and (ii) the Provisional Tariff Approval shall be allowed on the basis of the assumption that there shall be no free gas turbine start-ups.

To this extent, the Petitioner offers that the testing of requested heat rates can be undertaken by an independent consultant and the adjustment shall be applied retrospectively.

4. Upon the Authority's grant of the Provisional Tariff Approval for the Interim Period in terms of the proposed options, the Petitioner will proceed with generation and sale of electricity to the Power Purchaser and will continue to make its Switchyard Facility available on the approved Switchyard Facility charges. Once the final reference generation tariff for the Generation Facility and Switchyard Facility charges for the Switchyard Facility are determined by the Authority, the Petitioner reserves the right to consider whether the same will be

KOT ADDU POWER COMPANY LIMITED

commercially and operationally viable for the Petitioner to continue operations of the Generation Facility and availability of the Switchyard Facility.

5. We hope that the Authority finds that we have adequately presented our case for the grant of the Provisional Tariff Approval for the Interim Period. We would also like to take this opportunity to request the Authority to kindly approve and grant the reference generation tariff and switchyard facility charges requested in our Tariff Petition at the earliest so that our Facility may successfully supply power to the MEPCO region.

6. The Petitioner is available to provide any further assistance or address any further queries, as may be required by the Authority.

Yours sincerely,
For and on behalf of
KOT ADDU POWER COMPANY LIMITED

MUHAMMAD RABNAWAZ ANJUM
CHIEF FINANCIAL OFFICER /
GENERAL MANAGER (FINANCE)

A. ANTHONY RATH
COMPANY SECRETARY /
GENERAL MANAGER (LEGAL)

KOT ADDU POWER COMPANY LIMITED

ANNEXURE A

MEPCO'S LETTER DATED AUGUST 11, 2021

MEPCO

Office of the, Chief Executive Officer, MEPCO Multan. Ph: 0619220182

No. 3271/CE/MEPCO/CSD/M(Mkt) Dated: 11/08/2021

Shaheel Ahmad,
Additional Director, Registrar Office NEPRA,
NEPRA Tower Avenue (East), G5/1, Islamabad.

Sub: APPLICATION OF KOT ADDU POWER COMPANY LIMITED FOR EXTENSION IN THE TERM OF ITS GENERATION LICECE NO. IPGL/020/2004

Ref: Your office letter No.NEPRA/DG(Lic)/LAG-18/31338 dated:09.07.2021

With reference to above, some facts about KAPCO are as under;

1. KAPCO Power House is a primary source of 15No. Grid Stations owned by MEPCO, 01 No. consumer Grid Station with total installed capacity 822.5 MVA & 01 No. Grid Station of FESCO comprising of far flung area of Kot Addu, Layyah, Chowk Munda, Chowk Azam, Rang Pur, Kot Sultan, Noor Ahmad Wali, Shadan Lund and Tounsa Sharif.
2. Alternate source of above Grid Station is TPS Muzaffargarh & 220KV Muzaffargarh. TPS Muzaffargarh is already abandoned and 220KV Muzaffargarh is also overloaded. Low voltage problem may also aggravate in case of feeding from alternate source specially in summer peak.
3. Even in present scenario MEPCO faces low voltage problem on the tail end Grid Station's connected with KAPCO Power House especially in peak season of summer, for which KAPCO be advised to supply rated voltage at MEPCO Grid stations.

It is therefore submitted that above ground realities may be kept in view and the subject case may be decided as per NEPRA criteria / procedure please.

DA/A/TB Annexe.

11/08/21
General Manager (CS)
MEPCO HQ, Multan.

CC to:

1. GM (Op) MEPCO HQ Multan.
2. Chief Engineer (T&G) w.r.t. SE GSO letter No. 17722-23 dated: 06-08-2021.
3. Finance Director MEPCO HQ Multan.
4. SO to CEO MEPCO HQ Multan.
5. SE GSO Circle Multan.

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER COMPANY LIMITED

ANNEXURE B

NPCC'S LETTER DATED NOVEMBER 20, 2020

No: 15323-77/GM (SO)/NPCC/DDPC-1/CPPAG/ Dated: 20-11-2020

Chief Technical Officer
CPPA-G, Blue Area,
Islamabad

Subject: **Impact of Early Retirement of Power Projects Under 1994 Power Policy on System Operations.**

Reference: (i) CPPA-G Letter No. CPPA-G/2020/CTO/22275-80 Dated: 17-11-2020.
(ii) CPPA-G Letter No. CPPA-G/2020/CTO/22281-86 Dated: 17-11-2020.

is apprised that NTDC power system planning department in coordination of this office and her relevant NTDC offices has worked on the subject matter as desired by the 'Committee for egotiation with IPPs' formed pursuant to CCoE decision of 20th May 2020. The preliminary sessment of the future requirements of the existing IPPS of 1994 policy is based on the lowing aspects:

a. Existing system performance and available future grid system expansion plan for the next 5 years.

b. Consideration of IPPs fulfilling the following grid system operational requirements:

- Grid constraint management and voltage stability support, especially during high demand scenario in summer
- Economical power dispatch
- Ramping capability, and load following capability especially considering increas

required in medium to long term p... production simulation (generation capacity analysis) and grid system operational support studies. The detailed assessment would also include (i) technical examination/inspection/test of the generation facilities to ascertain their current health, emissions, efficiency and longevity and (ii) assessment of potential capacity and/or energy to DISCOs in the bilateral contract market envisaged under the CTBCM.

4. The results of the preliminary assessment by NTDC regarding IPP requirements under 1994 Policy is provided in the attached table.

Submitted for your information and further analysis.

(Engr. Muhammad Ayub)
General Manager (System Operation)
NPCC, NTDC, Islamabad

KOT ADDU POWER COMPANY LIMITED

C.C.

1. Managing Director NTDC, 414-Wapda House Lahore.
2. Dy: Managing Director (P&E), NTDC, WAPDA House Lahore.
3. Dy: Managing Director (AD&M), NTDC, 413-WAPDA House Lahore.
4. General Manager (Power System Planning), NTDC, PIA Tower Lahore.

Priority Proposed for the Power Generation Projects Under 1994 Policy

						Remarks
A. IPPs under 1994 Policy						
1345	RFO, HSD & DUNG	2021	✓			• Its generators are connected at two volta levels (220 & 132 kV). • It has two components: (i) Generators; a 220/132 kV grid station with 500 MVA ca feeding MEPCO. • Its 220/132 kV grid station is required for system operational support. • May be considered as merchant plant af expiry of its PPA. • Detailed feasibility study from independ consultant is required to determine the quantum of generation capacity requite future as well as to assess the potential benefits of its utilization for peaking dut
1207	RFO	2027			✓	• Not required for system operational sup • M/s HUBCO is considering to sell its 600 power to KE by converting 2 out of 4 un oil to coal.

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER COMPANY LIMITED

124	RFO	2027	✓			• Required till the completion of Lahore North 500/220/132 kV grid station (expected in 20 • This plant is candidate for consideration as merchant plant after expiry of its PPA, in vie of system operational support capability wi needed.
128	GAS	2030	✓			• Provides grid system operational support to feed QESCO • Plant is unavailable since October 2019 due t expiry of gas contract between the complex SSGC. RLNG contract between the parties is not yet finalized.
549	GAS	2030	✓			• Low cost dedicated gas plant
151	RLNG	2030	✓			• Required for grid constraint management du summer season in future, especially in case reduction in dispatch of Trimmu power p (expected COD in Dec, 2020), which may either due to generator outages or unavailab of RLNG.
350	RFO	2028		✓		• Wide operating range of generation • May be considered as a merchant plant a expiry of PPA. • Its dependable capacity may also help evacuate additional ARE generation in the N system which needs further exploration.

KOT ADDU POWER COMPANY LIMITED

A. Aleem

KOT ADDU POWER COMPANY LIMITED

350	RFO	2028		✓		• Same remarks as for AES LALPIR (...)
599	RLNG	2030		✓		• Grid operational support is not so sig... especially in view of large sized RLNG... its vicinity. • Generation cost is lower.
126	RFO	2030		✓		• Required for system operational supp... completion of Lahore (North 500/220... grid station (expected in 2023)
213	RLNG	2027	✓			• Low cost on Raw gas.
28	RLNG	2032			✓	• Grid operational support is not so sig... especially in view of large sized RLNG... • Generation cost is lower than RFO.
10	RLNG	2044			✓	• Grid operational support is not so sig... especially in view of large sized RLNG... its vicinity. • Generation cost is lower than RFO.

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER COMPANY LIMITED

ANNEXURE C

NTDC'S LETTER DATED OCTOBER 17, 2022

Annex-A

BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (NEPRA)

TARIFF PETITION
FOR
REFERENCE GENERATION TARIFF AND SWITCHYARD FACILITY CHARGES

PURSUANT TO
ENABLING PROVISIONS OF NEPRA ACT 1997
READ WITH ENABLING PROVISIONS OF
RULES & REGULATIONS MADE THEREUNDER

ON BEHALF OF

KOT ADDU POWER COMPANY LIMITED

FOR THE HONORABLE AUTHORITY'S APPROVAL OF REFERENCE GENERATION TARIFF AND SWITCHYARD FACILITY CHARGES
FOR
KOT ADDU POWER COMPANY LIMITED
RELATING TO
THERMAL POWER GENERATION FACILITY OF 1600 MW (GROSS)
LOCATION
KOT ADDU, DISTRICT MUZAFFARGARH, PUNJAB, PAKISTAN

[MARCH 08, 2023]

LEGAL & REGULATORY CONSULTANT

HAIDERMOTA & CO.
LAHORE OFFICE
16-C-3
GULBERG III
LAHORE, 54000
TEL: +92 (042) 111 520 000
FAX: +92-21-35871054
EMAIL: hmco@hmco.com.pk

THE PETITIONER

KOT ADDU POWER COMPANY LIMITED
REGISTERED OFFICE
OFFICE NO. 309, 3RD FLOOR
EVACUEE TRUST COMPLEX
AGHA KHAN ROAD, F-5/1
ISLAMABAD, PAKISTAN
TEL: +92-42-35772912-16
FAX: +92-42-35772922
EMAIL: info@kapco.com.pk

TABLE OF CONTENTS

LIST OF ACRONYMS

Unless otherwise defined in this Tariff Petition, all capitalized terms shall bear the meaning ascribed to such terms as follows:

Term	Definition
AIM	Akhuwat Islamic Microfinance
BSDG	Black Start Diesel Generator
CCGT	Combined Cycle Gas Turbine
CPPA-G	Central Power Purchasing Agency (Guarantee) Limited
CPI	Consumer Price Index
CPP	Capacity Purchase Price
CSR	Corporate Social Responsibility
CTBCM	Competitive Trading Bilateral Contract Market
DISCOs	Distribution Companies
EB	Energy Block
EHV	Extra High Voltage
EPP	Energy Purchase Price
FCC	Fuel Cost Component
FESCO	Faisalabad Electric Supply Company
FOM	Fixed Operations and Maintenance
FY	Financial Year
Gas	Gas (RLNG)
GOP	The Government of Pakistan
GST	General Sales Tax
GT	Gas Turbine
GWh	Gigawatt hour
HBL	Habib Bank Limited
HT	High Tension
HV	High Voltage
HHV	Higher Heating Value
HSD	High Speed Diesel
IGCEP	Indicative Generation Capacity Expansion Plan

IPPs	Independent Power Producers
ISO	International Standard Organization
KIBOR	Karachi Interbank Offered Rate
kJ	Kilo joule
kWh	Kilowatt hour
kV	Kilovolt
LD	Liquidated Damages
LESCO	Lahore Electric Supply Company
LHV	Lower Heating Value
LSFO	Low Sulphur Furnace Oil
LT	Low Tension
LVO&M	Local Variable Operations and Maintenance
MEPCO	Multan Electric Power Company
MoE	Ministry of Energy (Power Division)
MMBtu	Million British Thermal Units
MMCFD	Million Cubic Feet Per Day
MVA	Megavolt Amperes
MW	Megawatts
NEPRA	National Electric Power Regulatory Authority
NPCC	National Power Control Centre
NPGCL	Northern Power Generation Company Limited
NTDC	National Transmission & Dispatch Company Limited
OFME	Other Force Majeure Events
O&M	Operations and Maintenance
PESCO	Peshawar Electric Supply Company
PKR	Pakistani Rupees
Plant 1	Energy Block I, Energy Block IIA and Energy Block IIB
Plant 2	Energy Block IIC and Energy Block III
PPA	Power Purchase Agreement
PSO	Pakistan State Oil Company Limited

RLNG	Re-gasified Liquefied Natural Gas
ROE	Return on Equity
RoEDC	Return on Equity During Construction
RSC	Reference Site Conditions
SBLC	Standby Letter of Credit
SNGPL	Sui Northern Gas Pipelines Limited
SPA	Special Purpose Agent
ST	Steam Turbine
STG	Steam Turbine Generator
VOM	Variable Operations and Maintenance
WAPDA	The Pakistan Water and Power Development Authority
WPPF	Workers Profit Participation Fund
WWF	Workers Welfare Fund
UBL	United Bank Limited
US CPI	United States Consumer Price Index
USD	United States Dollar

AFFIDAVITS OF AUTHORIZED REPRESENTATIVES OF KOT ADDU POWER COMPANY LIMITED

E-STAMP

ID : PB-LHR-B13177465A70F227
Type : Low Denomination
Amount : Rs 100/-

Scan for online verification

Description : AFFIDAVIT- 4
Applicant : Adolf Anthony Rath [42301-2207610-1]
S/O : Leonard Charles Rath
Agent : Arslan [35201-0552740-3]
Address : Lahore
Issue Date : 7-Mar-2023 3:17:02 PM
Delisted On/Validity : 14-Mar-2023
Amount in Words : One Hundred Rupees Only
Reason : Affidavit
Vendor Information : Ghulam Qadir | PB-LHR-1642 | Raja Centre Gulberg

7160

نوٹ: یہ ٹرانزیکشن تاریخ اجرا سے سات دنوں تک کے لیے قابل استعمال ہے۔ای اسٹامپ کی تصدیق بذریعہ ویب سائٹ/موبائل کوڈ یا ایس ایم ایس کی جا سکتی ہے

Type "eStamp <16 digit eStamp Number>" send to 8100

OATH COMMISSION LAHORE

BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT of Mr. Adolf Anthony Rath, son of MR. LEONARD CHARLES RATH, resident of House no. 450-A, Street No. 20, Phase V, DHA, Lahore Cantt, Lahore, and holding CNIC No. 42301-2207610-1 (the **"Deponent"**), being the Company Secretary/General Manager Legal of **KOT ADDU POWER COMPANY LIMITED** (*a company duly established and existing under the laws of Pakistan with its corporate office located at 5-B/3, Gulberg-III Lahore, Pakistan and registered office located at Office No. 309, 3rd Floor, Evacuee Trust Complex, Agha Khan Road, F5/1, Islamabad, Pakistan).*

I, the above-named Deponent, do hereby solemnly affirm and declare that:

1. I am the Adolf Anthony Rath of **KOT ADDU POWER COMPANY LIMITED** (*a company duly established and existing under the laws of Pakistan with its corporate office located at 5-B/3, Gulberg-III Lahore, Pakistan and registered office located at Office No. 309, 3rd Floor, Evacuee Trust Complex, Agha Khan Road, F5/1, Islamabad, Pakistan*) (the **"Petitioner"**).

2. For the purposes of preparation, finalization, submission and filing (including all matters in respect of the same), on behalf of the Petitioner, of the accompanying tariff petition (including all supporting documents attached thereto) dated March 08, 2023 (the **"Tariff Petition"**) before the **NATIONAL ELECTRIC POWER REGULATORY AUTHORITY** (the **"Authority"**) and for the purposes of further representing the Petitioner and performing all acts and deeds, on behalf of the Petitioner, in respect of the Tariff Petition, I am the principal authorized representative/attorney of the Petitioner in terms of the authority and powers vested in and conferred on me, the Deponent, *vide* the duly passed resolution(s) of the board of directors (the **"Board"**) of the Petitioner dated February 22, 2023.

3. The contents of the accompanying Tariff Petition are true and correct to the best of my knowledge and belief, and nothing material or relevant thereto has been concealed or withheld therefrom.

4. All further documentation and information to be provided by me, the Deponent, on behalf of the Petitioner, in connection with the aforesaid Tariff Petition shall be true and correct to the best of my knowledge and belief.

A. Adolf

.....

DEPONENT

ATTESTED
Chaudhary Ashraf Advocate
Oath Commissioner Lahore

VERIFICATION

It is hereby verified on solemn affirmation at Lahore, Pakistan on this 8 day of March, 2023, that the contents of the above Affidavit are true and correct to the best of my knowledge and belief, and that nothing material or relevant thereto has been concealed or withheld therefrom to the best of my knowledge and belief.

.....

DEPONENT

VERIFICATION

It is hereby verified on solemn affirmation at Lahore, Pakistan on this 8 day of March, 2023, that the contents of the above Affidavit are true and correct to the best of my knowledge and belief, and that nothing material or relevant thereto has been concealed or withheld therefrom to the best of my knowledge and belief.

.....

DEPONENT

E-STAMP

ID : PB-LHR-45CAF690479E80FC
Type : Low Denomination
Amount : Rs 100/-

Scan for online verification

F/A-4

7159

Description : AFFIDAVIT - 4
Applicant : Muhammad Rabnawaz Anjum [38402-7415125-1]
S/O : Soofi Ghulam Rasool
Agent : Arslan [35201-0552740-3]
Address : Sargodah
Issue Date : 7-Mar-2023 3:18:14 PM
Delisted On/Validity : 14-Mar-2023
Amount in Words : One Hundred Rupees Only
Reason : Affidavit
Vendor Information : Ghulam Qadir | PB-LHR-1642 | Raja Centre Gulberg

نوٹ: یہ ٹرانزیکشن تاریخ اجرا سے سات دنوں تک کے لیے قابل استعمال ہے۔ای اسٹامپ کی تصدیق بذریعہ ویب سائٹ،کیو آر کوڈ یا ایس ایم ایس سے کی جاسکتی ہے

Type "eStamp <16 digit eStamp Number>" send to 8100

CHAUDHARY Z. ASHRAF ADVOCATE ★ OATH COMMISSION LAHORE

BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT of Mr. Muhammad Rabnawaz Anjum, son of MR.SOOFI GHULAM RASOOL, resident of Karkhanay Wala, Post Office Khas Wijh, Sahiwal, Sargodha, and holding CNIC No. 38402-7415125-1 (the **"Deponent"**), being the Chief Finance Officer/General Manager Finance of **KOT ADDU POWER COMPANY LIMITED** (*a company duly established and existing under the laws of Pakistan with its corporate office located at 5-B/3, Gulberg-III Lahore, Pakistan and registered office located at Office No. 309, 3rd Floor, Evacuee Trust Complex, Agha Khan Road, F5/1, Islamabad, Pakistan).*

I, the above-named Deponent, do hereby solemnly affirm and declare that:

5. I am the Chief Finance Officer/General Manager Finance of **KOT ADDU POWER COMPANY LIMITED** (*a company duly established and existing under the laws of Pakistan with its corporate office located at 5-B/3, Gulberg-III Lahore, Pakistan and registered office located at Office No. 309, 3rd Floor, Evacuee Trust Complex, Agha Khan Road, F5/1, Islamabad, Pakistan*) (the **"Petitioner"**).

6. For the purposes of preparation, finalization, submission and filing (including all matters in respect of the same), on behalf of the Petitioner, of the accompanying tariff petition (including all supporting documents attached thereto) dated March 08, 2023 (the **"Tariff Petition"**) before the **NATIONAL ELECTRIC POWER REGULATORY AUTHORITY** (the **"Authority"**) and for the purposes of further representing the Petitioner and performing all acts and deeds, on behalf of the Petitioner, in respect of the Tariff Petition, I am the principal authorized representative/attorney of the Petitioner in terms of the authority and powers vested in and conferred on me, the Deponent, *vide* the duly passed resolution(s) of the board of directors (the **"Board"**) of the Petitioner dated February 22, 2023.

7. The contents of the accompanying Tariff Petition are true and correct to the best of my knowledge and belief, and nothing material or relevant thereto has been concealed or withheld therefrom.

8. All further documentation and information to be provided by me, the Deponent, on behalf of the Petitioner, in connection with the aforesaid Tariff Petition shall be true and correct to the best of my knowledge and belief.

.....
DEPONENT

ATTESTED
Chaudhary Z. Ashraf Advocate
Oath Commissioner Lahore

F/A-5

EXTRACT OF
RESOLUTION PASSED BY
BOARD OF DIRECTORS OF
KOT ADDU POWER COMPANY LIMITED AND
AUTHORITY LETTER

KAPCO

BOARD RESOLUTIONS

It is hereby unanimously resolved that:

(A) **KOT ADDU POWER COMPANY LIMITED** (*a public listed company duly established and existing under the laws of Pakistan with its registered office located at Office No. 309, 3rd Floor Evacuee Trust Complex Agha Khan Road, F5/1 Islamabad, Pakistan*) (the **"Company"**) intends to enter into (i) an agreement for sale of electric power from the Company's generation facility (the "**New PPA**"); and (ii) an agreement for use of the Company's switchyard facility, for a proposed term of five (5) years, on such terms as are mutually agreed and subsequently approved by the board of directors of the Company (the **"Board"**) in respect of Company's 1600 MW (Gross) multi-fuel based combined cycle thermal power plant located at Kot Addu Power Complex, Kot Addu District, Muzaffargarh, Punjab, Pakistan, **BE AND IS HEREBY AUTHORIZED** to prepare, finalize, deliver, file, apply, submit, and further pursue pursuant to the applicable laws of Pakistan, including the '*Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997*' (the **"NEPRA Act"**) and the rules and regulations made thereunder (the **"Applicable NEPRA Laws"**), a tariff petition (together with all documents attached thereto) (the **"Tariff Petition"**) before the **NATIONAL ELECTRIC POWER REGULATORY AUTHORITY** (the **"Authority"**) for the Authority's approval and in relation thereto, enter into and execute all required documents, make all filings, attend all hearings, provide all required information and pay all applicable fees, in each case, of any nature whatsoever.

(B) **FURTHER RESOLVED THAT,** in respect of the matters relating to the Tariff Petition, **MR. AFTAB MAHMOOD BUTT** (being the Chief Executive Officer of the Company and having CNIC No. 35202-4253519-5) **BE AND IS HEREBY** appointed as the authorized representative of the Company and is **HEREBY** authorized and empowered for and on behalf of the Company, as the Company's duly appointed **AUTHORIZED REPRESENTATIVE**, to address, perform, negotiate, decide, execute, implement and undertake all matters of any nature whatsoever in relation to the Tariff Petition including, without limitation:

(i) review, execute, submit, and deliver the Tariff Petition and any related documentation required by the Authority for its approval of the Tariff Petition including any contracts, documents, powers of attorney, affidavits, statements, letters, forms, applications, deeds, guarantees, undertakings, approvals, memorandum, amendments, letters, communications, notices, certificates, request statements and any other instruments of any nature whatsoever;

(ii) represent the Company in all negotiations, representations, presentations, hearings, conferences and/or meetings of any nature whatsoever with any entity (including, but in no manner limited to the Authority, CPPA-G, power purchaser, any private parties, companies, partnerships, individuals, governmental or semi-governmental

KOT ADDU POWER COMPANY LIMITED

KAPCO

authorities and agencies, ministries, boards, departments, regulatory authorities and/or any other entity of any nature whatsoever);

(iii) sign, execute and deliver, for and on behalf of the Company, all necessary documentation (including any contracts, documents, powers of attorney, affidavits, statements, letters, forms, applications, deeds, guarantees, undertakings, approvals, memorandum, amendments, letters, communications, notices, certificates, request statements and any other instruments of any nature whatsoever), pay the necessary fees, appear before any entity (including the Authority, CPPA-G, power purchaser, any private parties, companies, partnerships, individuals, governmental and/or semi-governmental authorities and agencies, ministries, boards, departments, regulatory authorities and/or any other entity of any nature whatsoever), as required from time to time, and do all acts necessary for processing and further approval of the reference tariff, as applied pursuant to the Tariff Petition, by the Authority;

(iv) further sub-delegate any or all of the aforementioned powers and authorities jointly (any two) to General Manager Engineering, General Manager Legal/ Company Secretary and/or General Manager Finance/ Chief Finance Officer; and

(v) do all such acts, deeds and things as may be necessary for carrying out the purposes aforesaid and give full effect to the above resolutions.

KOT ADDU POWER COMPANY LIMITED

.....

COMPANY SECRETARY

CERTIFICATION

CERTIFIED TO BE TRUE COPY

CERTIFIED, that, the above resolutions were duly passed by the board of directors of **KOT ADDU POWER COMPANY LIMITED** (*a public listed company duly established and existing under the laws of Pakistan with its registered office located at Office No. 309, 3rd Floor Evacuee Trust Complex Agha Khan Road, F5/1 Islamabad, Pakistan*) at its meeting held on February 22, 2023.

KAPCO

FURTHER CERTIFIED, that the afore-stated resolutions have not been rescinded and are in operation and in full force and effect as at the date hereof and that this is a true copy of the same.

KOT ADDU POWER COMPANY LIMITED

.....

COMPANY SECRETARY

F/A-6

COPY OF THE PAY ORDER

Just Payee C.

HBL HABIB BANK حبیب بینک
CORPORATE CENTRE 1242
102 103 UPPER MALL LAHORE

B.C. No. 25614252
Stationary No: **25614252**

2	4	1	0	2	2

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

Pay to or Order

PKR *****1,719,888.00

Rupees One Million Seven Hundred Nineteen Thousand Eight Hundred Eighty Eight Only.

Payable at any HBL Branch In Pakistan
Centralised Cheque Payable Account
30019903902586

Please do not write below this line.

Signatory
Muhammad Shafique
P.A # 17196

Signatory
PA No.
Muhammad Laiq
P.A. No:23331

⑈ 2561425 2⑈ 054300 1:00300 1990390 2588⑈ 010⑈

HBL HABIB BANK حبیب بینک

Banker's Cheque
Customer Advice

CORPORATE CENTRE 1242 **25614252**
102 103 UPPER MALL LAHORE

Cheque No. 25614252
Date 21/10/22

WE CONFIRM HAVING ISSUED THE FOLLOWING BANKER'S CHEQUE AT YOUR REQUEST

Favouring NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

The Sum of: Rupee - One Million Seven Hundred Nineteen Thousand Eight Hundred Eighty Eight Only.

Cheque Amount	PKR *****1,719,888.00
Commission	PKR **********464.00
Total Amount	PKR *****1,720,352.00
Funding Account No	12424011868703
WHT Recovered	**********

THIS IS A SYSTEM GENERATED ADVICE AND DOES NOT REQUIRE A SIGNATURE

KOT ADDU POWER COMPANY LIMITED

SECTION 1
DETAILS OF PETITIONER

1. DETAILS OF PETITIONER

1.1 NAME & ADDRESS

KOT ADDU POWER COMPANY LIMITED
Office No. 309, 3rd Floor
Evacuee Trust Complex
Agha Khan Road, F5/1
Islamabad, Pakistan.
TEL: +92 42 3577 2912-16
FAX: +92 42 3577 2922

1.2 AUTHORIZED REPRESENTATIVES

MR. AFTAB MAHMOOD BUTT
Chief Executive Officer
Kot Addu Power Company Limited
Email: aftab.butt@kapco.com.pk

MR. M. RABNAWAZ ANJUM
Chief Financial Officer
Kot Addu Power Company Limited
Email: rabnawaz.anjum@kapco.com.pk

MR. A. ANTHONY RATH
Company Secretary & General Manager Legal
Kot Addu Power Company Limited
Email: anthony.rath@kapco.com.pk

SECTION 2
INTRODUCTION TO PETITIONER
&
THE POWER PROJECT

2. INTRODUCTION TO PETITIONER & THE POWER PROJECT

2.1 THE PETITIONER & PROJECT BACKGROUND

2.1.1 Kot Addu Power Company Limited is a company duly established and existing under the laws of Pakistan with its corporate office at 5-B/3, Gulberg-III Lahore, Pakistan and registered office located at Office No. 309, 3rd Floor, Evacuee Trust Complex, Agha Khan Road, F-5/1, Islamabad, Pakistan (the "**Petitioner**").

2.1.2 The Petitioner was incorporated on April 25, 1996, as a public limited company under the Companies Ordinance, 1984 for the purposes of acquiring, operating and maintaining a 1600 MW (name plate capacity) multi-fuel-based generation facility/combined cycle thermal power plant, located at Kot Addu, District Muzaffargarh, Punjab, Pakistan (the "**Project**"). The Petitioner has been operating and maintaining the Project for more than 25 years.

2.1.3 The Project comprises of a generation facility that was divided into 3 energy blocks (under the Original PPA, as defined in Section 3.1.1), with each block having a combination of gas and steam turbines and, a switchyard facility. However, the Project is now classified into: Plant 1, Plant 2 (the "**Generation Facility**") and a switchyard facility connecting to 12 transmission lines and 4 autotransformers at 132kV/220kV levels (the "**Switchyard Facility**"), as more fully described in Section 5.2, of this tariff petition being filed by the Petitioner for approval and grant of a reference generation tariff and switchyard facility charges (the "**Tariff Petition**"). The Generation Facility and the Switchyard Facility shall hereinafter collectively be referred to as the "**Facility**".

2.1.4 The Project was acquired by the Petitioner pursuant to a transfer agreement dated June 27, 1996 ("**Transfer Agreement**") between the Petitioner and WAPDA. The following supporting documents relating to the Petitioner are attached as follows:

(a) **Annexure A (*Shareholding Pattern*)**;

(b) **Annexure B (*Memorandum and Articles of Association*)**; and

(c) **Annexure C (*Certificate of Incorporation*)**.

2.2 THE CONTRACTUAL ARRANGEMENTS

2.2.1 The Petitioner entered into, *inter alia*, the following key contractual arrangements to date:

CONTRACTUAL ARRANGEMENT	DATE OF EXECUTION	PARTIES
TRANSFER AGREEMENT	June 26, 1996	Petitioner & WAPDA
SHARE PURCHASE AGREEMENT	June 26, 1996	Petitioner & WAPDA
FACILITATION AGREEMENT	June 27, 1996	Petitioner & GOP
POWER PURCHASE AGREEMENT	June 27, 1996	Petitioner & WAPDA
OIL SUPPLY AGREEMENT	June 27, 1996	Petitioner & PSO
GAS SUPPLY AGREEMENT	June 27, 1996	Petitioner & SNGPL
GOP GUARANTEE	June 27, 1996	Petitioner & GOP
SERVICES AGREEMENT	June 27, 1996	Petitioner & WAPDA
FIRST PPA AMENDMENT AGREEMENT	October 03, 2000	Petitioner & WAPDA
SECOND PPA AMENDMENT AGREEMENT	April 20, 2002	Petitioner & WAPDA
THIRD PPA AMENDMENT AGREEMENT	February 11, 2021	Petitioner & WAPDA
MASTER AGREEMENT	February 11, 2021	Petitioner & WAPDA
PPA NOVATION AGREEMENT	February 15, 2021	Petitioner, WAPDA & CPPA-G (the "**Power Purchaser**")
TRIPARTITE RLNG AGREEMENT	October 1, 2021	Petitioner, SNGPL & Power Purchaser

2.3 CORPORATE HISTORY & KEY SHAREHOLDERS

The Privatization Commission, Government of Pakistan (the "**Commission**"), privatized the Petitioner (as a company) on June 27, 1996, after following an international competitive bidding process. As a result of successful privatization, WAPDA divested 36% of its shareholding in favour of the strategic investor, namely, National Power (Kot Addu) Limited (a wholly owned subsidiary of National Power, UK), along with transfer of management control, for a consideration of USD 291 million. In February 2005, the Commission (on behalf of WAPDA) sold another 18% of WAPDA's shareholding to the general public at a price of PKR 30/share (premium of PKR 20/share). Thereafter, on April 18, 2005, the Petitioner became a public listed company as it was formally listed on the Pakistan Stock Exchange (previously the Karachi Stock Exchange, the Lahore Stock Exchange and the Islamabad Stock Exchange). In August 2013, the strategic international investor sold its entire shareholding to local corporate entities and individuals.

A brief introduction and background of the key shareholders (having 5% or more voting shares) of the Petitioner is as follows:

2.3.1 Pakistan Water & Power Development Authority (WAPDA)/ GOP

WAPDA was established through an act of parliament in February 1958 for integrated and rapid development and maintenance of water and power resources of the country. WAPDA has established a very large network of transmission and distribution prior to re-structuring (2007) including 51,425 km HV and EHV transmission line, 705 grid stations, more than 187,648 km 11 kV HT and LT lines and electrification of more than 136,000 villages[1].

WAPDA currently holds 40.25% of the shareholding in the Petitioner and 3 of its nominees are on the Board of the Petitioner, including the Chairman of WAPDA, who is also the elected Chairman of the Board of Directors of the Petitioner.

2.3.2 United Bank Limited

UBL is one of the leading banks in Pakistan. With a customer base of over 4 million, UBL boasts Pakistan's widest network of over 40,000 customer touchpoints; this includes more than 1,400 branches, above 37,000 omni agents and over 1,400 ATMs. UBL is a pioneer in branchless banking with its UBL omni platform. Customers across the world have 24/7 access to the bank via UBL's world class internet banking. UBL was declared Pakistan's 'Best Bank for Corporate Finance & Capital Market Development' at the Pakistan Banking Awards 2017. UBL currently holds 5% of the share capital of the Petitioner[2].

2.3.3 KAPCO Employees Empowerment Trust

KAPCO Employees Empowerment Trust (the "**Trust**") was created under the Benazir Employees' Stock Option Scheme (the "**Scheme**") launched by the Government of Pakistan. Under the Scheme, 12% of the shares held by WAPDA were transferred to the Trust and unit certificates were issued to eligible employees against these shares. There shares are to be transferred back to WAPDA/GOP after the surrendering of unit certificates by the employees at the time of their retirement. Hence, effectively the shares held by the Trust (5.48% of Petitioner's share capital) are controlled by GOP/WAPDA, in addition to 40.25% shares held in the name of WAPDA. The Scheme has been in abeyance since 2012 on instructions of GOP.

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[1] *This information has been included on the basis of publicly available data, including data available on the official website of WAPDA.*

[2] *This information has been included on the basis of publicly available data, including data available on the official website of UBL.*

A. Aqil

SECTION 3
BACKGROUND TO THIS TARIFF PETITION

3. BACKGROUND TO THIS TARIFF PETITION

3.1 ORIGINAL POWER PURCHASE AGREEMENT & CONTINUED NEED FOR THE PROJECT

3.1.1 The Petitioner entered into a power purchase agreement (the **"Original PPA"**) for a period of 25 years commencing from June 27, 1996, and expiring on June 26, 2021 (the **"Term of Original PPA"**). However, pursuant to the Third PPA Amendment Agreement, the Term of Original PPA was extended by the Petitioner and WAPDA for 485 days, effective from June 27, 2021, on account of OFME (as defined under the Original PPA). Accordingly, the Original PPA expired on October 24, 2022.

3.1.2 Since expiry of the Original PPA, the Generation Facility is non-operational. However, due to repeated insistence of the NTDC and directives from the MoE, the Switchyard Facility is being made available by the Company to NTDC, which has resulted in the Company incurring Switchyard Facility costs of approximately PKR 303.2 million up until February 28, 2023 (detailed breakup provided in Section 7.5 of this Tariff Petition). The Company continues to incur additional Switchyard Facility costs on a day-to-day basis for making the Switchyard Facility available to NTDC.

3.1.3 Therefore, the Petitioner intends to enter into a new power purchase agreement (the "**New PPA**") with the Power Purchaser for (i) the continued supply of electric power from the Generation Facility on the basis of the Reference Generation Tariff and (ii) for making the Switchyard Facility available against the Switchyard Facility Charges (as defined in Section 7.4.1 of this Tariff Petition). The term for the New PPA is proposed to be 5 years for the Generation Facility and the Switchyard Facility, on a co-terminous basis (subject to renewal / extension, as mutually agreed between the Petitioner and the Power Purchaser - the "**New PPA Term**"), commencing from date of the final decision of this Tariff Petition by the honorable Authority (the "**New PPA Commencement Date**").

3.1.4 The Petitioner has successfully operated the Facility for over 25 years. In this period, the Petitioner has generated, on average, around 6,260 GWh of electric power per annum. Throughout its operations, the Petitioner has successfully met its obligations under the Original PPA. Whilst complying with a strict maintenance regime, the Petitioner guarantees that the Generation Facility still has a remaining useful life of over 10 years. This is also evident from the KAPCO Plant Remaining Useful Life Assessment (RULA) Study Report dated June 22, 2021 (the "**RULA Report**") carried out by an independent renowned consultant, M/s Ramboll UK.

*A copy of the RULA Report is attached as **Annexure D**.*

3.1.5 Historically, the Facility ran as a base load plant and played a crucial role in the supplying power to the local areas of MEPCO, PESCO and FESCO. In this regard, MEPCO through a letter, dated August 11, 2021, has supported the continued operations of the Facility in the system being primary source of 15 MEPCO grids, 1 consumer grid and 1 FESCO grid with total capacity of 822.5 MVA. Likewise, through a letter dated November 20, 2020, the system operator i.e., NPCC acknowledged that the Facility is '**critically required**'. Similarly, through a letter dated July 19, 2021, NPCC highlighted the issues that will be faced by the system in case the Petitioner becomes unavailable. In addition to being a reliable and consistent source of electricity, the Facility plays a significant and strategic role in the supply of power to the local region of Multan, Muzaffargarh, DG Khan and Layyah Districts through its 220 kV and 132 kV feeders.

*Copies of MEPCO's letter dated August 11, 2021, NPCC's letter dated November 20, 2020, and NPCC's letter dated July 19, 2021, are attached as **Annexure E** and **Annexure F, Annexure G** respectively.*

3.1.6 The Facility has a major role in the supply of electricity in emergency situations. It has a black-start facility (the **"Black-start Facility"**) to support the system in case of country-wide blackout. A recent demonstration of the Facility's role in case of emergency situations was seen when due to disruption in two 500 kV transmission lines, the system had a loss of 8000 MW and the Facility was utilized to facilitate the restoration of the system, by providing around 1000 MW at a short

notice. Another recent example of the Petitioner's strategic importance for the system and contribution became evident during the blackout which occurred on January 23, 2023. The Petitioner was requested by NTDC through letter dated January 23, 2023, to assist with the restoration of the system as per the direction of the Federal Minister of Energy despite the expiry of its Original PPA. The Power Purchaser also requested the Petitioner on the same date through its official e-mail (followed by its letter dated January 24, 2023), to assist in the restoration of power system after the country wide blackout by observing that "*the operation of KAPCO Power Plant in Open Cycle mode in the absence of PPA has been made solely in the larger national interest to overcome the emergency occurred on account of country wide Power System breakdown.*"

3.1.7 Further, through its letter dated January 25, 2023, NTDC highlighted the significance of the Facility including its Black-start Facility, and observed that "*the process got delayed due to non-operational status of units since expiry of PPA. However, the plant could keep their units ready for such operations as and when required, once the revised PPA between KAPCO and CPPA-G is settled/finalized.*" It is important to note here that had the Original PPA been renewed in time, with its units in standby mode, the Petitioner would have supported the restoration of the system much more expeditiously and efficiently. This would have indeed saved the country from the big economic loss and anxiety among the users because of the delay in restoration.

Copies of NTDC's letter dated January 23, 2023, Power Purchaser's letter dated January 24, 2023, and NTDC's letter dated January 25, 2023 are attached as ***Annexure H***, ***Annexure I*** *and* ***Annexure J*** *respectively.*

3.1.8 NTDC has also written a letter to the Company dated October 17, 2022, pursuant to meeting held at MoE, regarding expiry of the Original PPA. The meeting was attended by Additional Secretary-I and other representatives of the MoE, NTDC and Power Purchaser to discuss the imperative need for continued operations of the Facility without disruption. Based on the meeting discussions, NTDC, through its letter, has requested the Company to "*ensure the availability of its 220/132kV switchyard and other ancillary services after expiry of its PPA on 24-10-2022 at 24:00Hrs*". NTDC has further stated in the letter that "... *availability of KAPCO grid will support smooth operation of 220/132kV network for continuity of power evacuation to MEPCO and associated region*".

A copy of the NTDC letter dated October 17, 2022, is attached as ***Annexure K.***

3.2 NTDC BOARD AND IGCEP APPROVAL BY NEPRA

3.2.1 It is also pertinent to note that NTDC submitted the updated IGCEP 2022-2031 (duly approved by its board of directors), to National Electric Power Regulatory Authority (the "**Authority**") for its approval. The honorable Authority conducted a public hearing on October 19, 2022, and the IGCEP was approved by the Authority on February 01, 2023. As per the approved IGCEP 2022-2031, it has been documented that a minimum of 500 MW dispatch is required from the Facility till 2026 (after expiry of the Original PPA).

3.2.2 Upon the request of MoE, the Board of NTDC, through letter dated December 07, 2022, approved the retention of the 500 MW capacity from '*KAPCO power plant (Block – I and Block - II)*' until the year 2025-2026 and recommended as below the following to the Power Purchaser:

1. The following should be retained to ensure adequate reliability of power supply to the local area network:

    i. The generation units at '*KAPCO power plant Block I (GT#13, GT#14 & ST#15)*' *connected to the 220 kV switchyard and 'Block II (GT#1, GT#2, HRSG #9A of ST #9 & HRSG #10A of ST #10)*' connected with 132 kV switchyard.

    ii. The 220/132 kV substation of the Petitioner with no expiry date; and

A copy of the NTDC letter dated December 07, 2022, is attached as ***Annexure L.***

3.2.3 The indicative vs actual load factors, as per IGCEP 2021-2030, for the FYs 2021 and 2022 varied in accordance with the **revised energy block configurations** are provided in the tables below:

Energy Block	IGCEP 2020-21	Actual 2020-21	IGCEP 2021-22	Actual 2021-22
Block I	**14.68%**	**55.59%**	**16.63%**	**65.50%**
Block IIA	3.11%	26.35 %	4.96%	42.08%
Block IIB		31.14%		43.16 %
Block IIC		25.03 %		42.16 %
Block III	0.00 %	5.84 %	0.00 %	11.98 %
Facility	**5.38%**	**30.30%**	**6.91%**	**42.36%**

3.2.4 As per the approved IGCEP 2022-2031, following are the projected load factors of the Facility till 2026[3]:

Year	EB-I	EB-II			Facility *
		EB-IIA	EB-IIB	EB-IIC	
2022-23	35.31%	11.86%			**19.02%**
2023-24	35.38%	11.83%			**19.02%**
2024-25	35.25%	11.89%			**19.02%**

*Excluding EB-III (as per IGCEP 2022-2031)

3.2.5 Based on the data provided in the tables above and keeping in view the last 2 years' actual load factor vs. the load factor as per IGCEP 2021-2030, it is evident that plant load factor for the Facility for next few years will remain reasonably high (~30%), mainly due to the reason that IGCEP does not fully take into consideration the technical and/or fuel constraints.

*Copies of the relevant extracts of the IGCEP 2021-2030 and IGCEP 2022-2031 are attached as **Annexure M** and **Annexure N**, respectively.*

3.3 ORIGINAL TARIFF PETITION

3.3.1 The Petitioner previously filed a tariff petition on October 24, 2022 i.e., upon the expiry of the Original PPA (the "**Original Tariff Petition**"). The Authority considered the Original Tariff Petition and decided to not admit "*...with the directions to resubmit the said petition, if desired so, along with all documentary requirements **particularly** the **consent** of the **power purchaser** i.e., **CPPA-G**.*" Thereafter, the Petitioner, through a letter dated December 07, 2022 (the "**Response Letter**") brought to the honorable Authority's attention and clarified for the honorable Authority's benefit that there is no legal requirement (under any NEPRA laws, rules or regulations) to obtain a consent letter from the Power Purchaser and file the same along with the Original Tariff Petition.

*A copy of the Response Letter is attached as **Annexure O.***

3.3.2 The Petitioner further takes this opportunity to draw the honorable Authority's attention to the fact that since submission of the Original Tariff Petition, the honorable Authority has promulgated and notified the the National Electric Power Regulatory Authority (Electric Power Procurement) Regulations, 2022 (the "**2022 Procurement Regulations**"). In terms of the regulation applicable to the Petitioner under the 2022 Procurement Regulations i.e., Regulation 8(1)(f) (which is discussed in more detail in Section 3.4 of this Tariff Petition), there is no requirement to obtain a "*consent letter*" from the supplier of last resort either as the criteria for allowing the Petitioner to continue the supply of power under Regulation 8(1)(f) requires inter-alia fulfillment of least cost criteria and optimization in IGCEP (which criteria is already met by the Petitioner for reasons detailed in Section 3.4 of this Tariff Petition) and thereafter it is only the approval of the honorable Authority that is required for the tariff and the power purchase agreement.

[3] These numbers are derived from IGCEP 2022-2031.

3.3.3 In view of the foregoing and given the remaining useful life of the Facility, the Petitioner intends to file this Tariff Petition for the approval of the generation tariff for Plant 1 and Plant 2 ("**Reference Generation Tariff**") and Switchyard Facility Charges (as detailed in Section 12) by the Authority.

3.4 PROMULGATION OF THE NEPRA (ELECTRIC POWER PROCUREMENT) REGULATIONS 2022

3.4.1 The Authority has introduced the 2022 Procurement Regulations are effective immediately, as per Regulation 1(2), which states as follows:

> "*These regulations shall come into force at once.*"

3.4.2 Furthermore, the 2022 Procurement Regulations are directly applicable on the acquisition of electric power by the electric power suppliers. More specifically, the 2022 Procurement Regulations have introduced competitive bidding and certain other modes of the procurement of electric power by "*suppliers of last resort.*"[4]

3.4.3 Based on a plain reading of the 2022 Procurement Regulations and on the basis that the Original PPA is expired, the Petitioner notes that the Facility falls under Regulation 8(1)(f) of the 2022 Procurement Regulations (reproduced below):

> "***8. New electric power procurement by a supplier of last resort.*** *— (1) Any new electric power procurement by a supplier of last resort shall only be in accordance with these regulations and the power acquisition programme approved by the Authority, through competitive auction:*
>
> *Provided that electric power procurement from:*
>
> *(f) generation facilities that were providing electric power to suppliers of last resort under a power purchase agreement or set up by the KE at its own as a generation licensee, and the* ***respective power purchase agreement*** *or term approved under the generation licence for* ***sale of electric power has expired****, shall be subject* ***to fulfilment of least cost criteria and optimization in the IGCEP*** *and* ***prior approval of tariff and power purchase agreement by the Authority****."*

3.4.4 Accordingly, the Petitioner needs to fulfill the following compliance requirements under Regulation 8(1)(f) in order to provide electric power to the supplier of last resort:

(i) Fulfillment of least cost criteria;

(ii) Optimization in the IGCEP; and

(iii) Prior approval of tariff and PPA by the Authority.

3.4.5 The Project has been optimized in the IGCEP 2022-2031 up till the year 2026 as it is specifically stated in the IGCEP 2022-2031 that the Facility is required. Furthermore, the Facility fulfills the least cost criteria as it is the only facility available which can supply power to local area network due to system requirement/constraints. Therefore, in order to meet the third compliance requirement under the 2022 Procurement Regulations and the requirement under the Renewed Generation License, the Petitioner has approached the honorable Authority for approval of its Reference Generation Tariff and Switchyard Facility Charges on the basis of this Tariff Petition, which approval shall then form basis for formalizing the New PPA between the Petitioner and the Power Purchaser.

[4] "**Supplier of last resort**" means a person who holds an electric power supply licence for the service territory specified in its licence and is obligated to supply electric power to all consumers located in that service territory at the rates determined by the Authority, and is also obligated to provide electric power supply to the consumer, located within its service territory, of any competitive supplier who defaults on its obligations of electric power supply.

3.5 CPPA-G AS AN AGENT ON BEHALF OF THE SUPPLIER OF LAST RESORT

3.5.1 Under the 2022 Procurement Regulations, it is the responsibility of the supplier of last resort i.e., DISCOs to procure electric power from generation companies. In case of the Facility, it is to be noted that the Facility feeds 15 MEPCO grids and is a primary source of power to the local regions of Multan, Muzaffargarh, DG Khan, Layyah Districts.

3.5.2 Be that as it may, the honorable Authority would note that CPPA-G was granted a certificate of registration no. MOR/01/2018 (the "**Registration**") by the honorable Authority on November 16, 2018, under Rule 3 of the NEPRA (Market Operator Registration, Standards and Procedure) Rules, 2015. Pursuant to the Registration, CPPA-G, in addition to being registered as a market operator was authorized to act as an agent on behalf of the DISCOs for electric power procurement. The Registration was granted for a period of 5 years and made effective from May 28, 2017, pursuant to Article 3 of Annex A to the Registration. Accordingly, the Registration expired on May 28, 2022.

3.5.3 Subsequently, CPPA-G was granted a market operator license no. MOL/01/20225 (the **"License"**) on May 31, 2022, by the Authority for a period of 20 years. The License was granted pursuant to Regulation 3 of the National Electric Power Regulatory Authority Licensing (Market Operator) Regulations, 2022 ("**Market Operator Regulations**") and Section 23A and 23B of the NEPRA Act. As per Article 3.3 of the License read with Article 27, CPPA-G continues to perform its role as an agent of the DISCOs. The aforementioned articles are reproduced as follows:

> *Article 3.3 "The Licensee is not authorized to perform any other activity that may require a separate licence or registration under the Act or act as agent of DISCOs* ***subject to*** *the provisions of Article 27 of this Licence."*
>
> *Article 27.1 "The Licensee shall, at the earliest but not later than twelve (12) months from date of grant of this Licence, separate its functions, as market operator from its existing role as an agent of the DISCOs, in two distinct legal entities and apply to the Authority for transfer of this Licence. In the event, these two functions are not separated in two distinct legal entities as stated above, the same shall be treated as a persistent contravention of the terms and conditions of the Licence and the Authority may initiate legal proceedings against the Licensee accordingly, and also issue such directions as may be deemed appropriate that may include appointment of an administrator in respect of the market operator functions of the Licensee."*
>
> *Article 27.2 "Until such time the functions of the Licensee as agent of the DISCOs and Market Operator are not separated in two distinct legal entities,* ***the Licensee shall ensure that its business is operated in such a manner that the management responsible for Market Operations and accounting thereof is segregated from the CPPA-G's role as agent of the DISCOs so that the Market Operations are carried out independently, transparently, and impartially.*** *This segregation of two functions of the Licensee shall be ensured at the earliest but in any event not later than from the date of grant of Licence."*

3.5.4 In light of the above, it is evident the status of CPPA-G as an agent of the DISCOs is still intact. Therefore, the Petitioner requests the honorable Authority to direct CPPA-G to act on behalf of the supplier of last resort and execute the New PPA with the Petitioner, pursuant to the determination of this Tariff Petition and in accordance with Regulation 8(1)(f) of 2022 Procurement Regulations.

3.6 APPLICATION FOR APPROVAL OF REFERENCE GENERATION TARIFF AND SWITCHYARD FACILITY CHARGES

3.6.1 Based on the above and in view of the submissions set out herein, the Petitioner has prepared and hereby submits before the Authority this Tariff Petition for approval of the Reference Generation Tariff and Switchyard Facility Charges for the New PPA Term.

[5] https://nepra.org.pk/licensing/Licences/Market%20Operator/LAM-01%20Market%20Operator%20Licence%20CPPAG%2031-05-2022.PDF

3.7 SUBMISSION

3.7.1 Pursuant to the applicable laws of Pakistan, including the NEPRA Act and the 2022 Procurement Regulations, thereunder: **KOT ADDU POWER COMPANY LIMITED HEREBY SUBMITS**, for the Authority's kind consideration, this Tariff Petition for approval of (i) the Reference Generation Tariff for the Generation Facility and Switchyard Facility Charges for the Switchyard Facility on the following basis:

3.7.2 The term for the New PPA Term is approved for the Generation Facility and the Switchyard Facility, on a co-terminous basis (subject to renewal / extension, as mutually agreed between the Petitioner and the Power Purchaser.

3.7.3 CPPA-G is directed to act for and on behalf of the supplier of last resort in terms of the 2022 Procurement Regulations and for the purposes of entering into the New PPA.

3.7.4 The Petitioner is allowed to recover the Switchyard Facility costs of approximately PKR 303.2 million plus the costs being incurred by the Petitioner on a day-to-day basis for making the Switchyard Facility available, up until the date of the final determination by the honorable Authority in respect of the Tariff Petition.

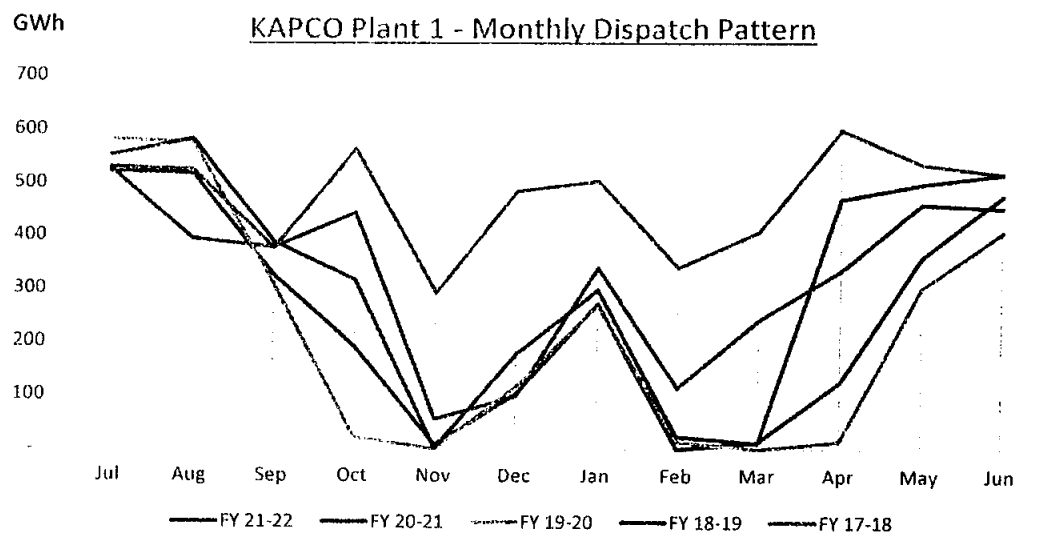
3.7.5 This Tariff Petition is submitted in triplicate.

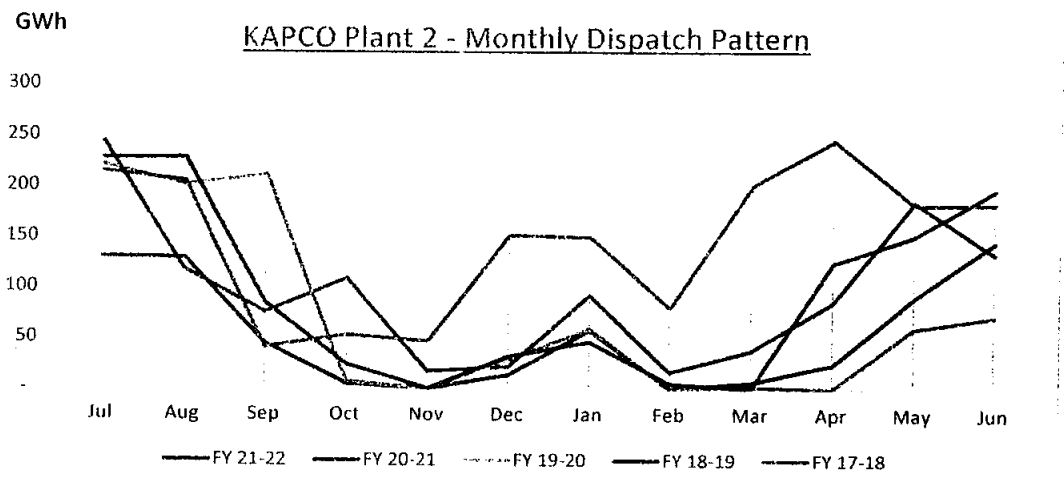
3.7.6 The required fee for the Tariff Petition was paid through a non-refundable pay order in the amount of PKR 1,719,888/- (Pakistani Rupees One Million Seven Hundred Nineteen Thousand Eight Hundred Eighty-Eight only) (net of withholding tax of 8%) dated October 21, 2022, issued by HBL, drawn in favor of the Authority. The pay order was submitted to the Authority along with the Original Tariff Petition (a copy attached herewith). Since the Original Tariff Petition was returned 'un-actioned' therefore, the same fee will be considered for this Tariff Petition.

SECTION 4
KEY CONSIDERATIONS

4.1 THE PETITIONER – A RELIABLE SOURCE OF POWER GENERATION

4.1.1 The Petitioner has successfully operated its Generation Facility, has catered for Power Purchaser's consumer requirements by generating an average of 6,260 GWh per annum and has diligently met its obligations under the Original PPA for over 25 years. More significantly, in the *peak* summer months, the Generation Facility ran as a base load plant. The monthly load pattern of dispatch from the Generation Facility (Plant wise / block wise[6]) is set out below for the Authority's reference and the same demonstrates the Generation Facility's contribution during the peak summer months and again during canal closure and the role of the Petitioner as part of the embedded generation projects connected to the national grid:





[6] *Under the Original PPA, the Project comprised of 3 energy blocks EB-I, EB-II, and EB-III. In the New PPA, this will be split into two plants, Plant 1 (comprising of EB-I, EB-IIA, EB-IIB) and Plant 2 (EB-IIC and EB-III). Please refer to Section 5 of this Tariff Petition for further details on block wise configuration.*

Load Factor Percentage (%)

Year	Plant - 1			Plant - 2		Facility
	EB-I	EB-IIA	EB-IIB	EB-IIC	EB-III	
2017-18	89.51	67.44	67.93	56.28	26.62	**63.26**
2018-19	65.47	46.59	37.76	38.72	14.45	**42.20**
2019-20	41.54	31.10	30.67	32.49	8.59	**29.57**
2020-21	55.59	26.35	31.14	25.03	5.84	**30.30**
2021-22	65.50	42.08	43.16	42.16	11.98	**42.36**

4.1.2 In the absence of the Petitioner continuing to supply electricity to the Power Purchaser and to make Switchyard Facility available, the distribution system as technical studies suggest, will face a shortage in electricity supply especially in summers, as there is insufficient generation/transmission capacity at present. Technical reports further suggest that without Petitioner's Switchyard and generation support, it would be difficult to maintain grid sustainability in the region to meet demand. The Petitioner has an important, significant and strategic role in the supply of power to the MEPCO local region of Multan, Muzaffargarh, DG Khan, Layyah Districts through its 220 kV and 132 kV feeders. If the Petitioner is not available to supply electricity to MEPCO, the result would be a shortfall of approximately 700 MW, directly impacting the critical load clusters at Multan, Muzaffargarh, DG Khan and Layyah Districts, amongst other areas. It is pertinent to mention that the Petitioner's units are most efficient in the region. Also, only 6 units of the Petitioner are connected at 132 kV system. Other power plants (Lalpir, PAK GEN, TPS Muzaffargarh) are connected at 220 kV system.

4.1.3 Additionally, it is to be noted that the Petitioner has successfully contributed to the power sector of the country in emergency situations. Recent examples of support in system restoration are as follows:

(i) On January 09, 2021, the Petitioner provided immediate and significant support during country wide blackout. The Petitioner started its units with own Black-start Facility and provided power to the local region and national grid. 3 units remained on bar in generation mode for more than two hours.

(ii) On October 13, 2022, the Petitioner supplied 1055 MW to the local region and national grid.

(iii) On January 23, 2023, the Petitioner was requested by NPCC/CPPA-G to support the system during blackout through its Black-start Facility. The Petitioner supported the restoration of the system by sharing approx. 250 MW without having any contractual obligation (non-existence of PPA) in the best national interest.

4.2 THE PETITIONER – AN EXPERIENCED POWER PRODUCER

4.2.1 The Petitioner has been in the business of generating and selling electricity since 1996. The Petitioner, with its extensive experience of over 25 years, has not only satisfied its obligations but has also established itself as an experienced and reliable power producer in Pakistan's power generation industry. Being an established name in IPPs over the years, the Petitioner's contribution in power generation is widely recognized – with its business practices being considered as a gold standard in the industry.

4.3 THE FACILITY

4.3.1 As highlighted in Section 5 (*The Facility*) of this Tariff Petition, the Facility's remaining useful life has been assessed and certified for a period of at least 10 years. The Facility has efficient and reliable European equipment and machinery, which is fundamental to the Petitioner's success as a power producer for over 25 years. Hence, it is submitted that due consideration shall be given by the honorable Authority to the benefits that will be driven from the continued operation of the Facility.

4.4 SUPPORT IN ENERGY SECURITY OF THE COUNTRY

4.4.1 The following are strategic key features of the Facility which may support the energy security of the country:

(a) Fuel flexibility – the Facility is the only plant with tri-fuel capability in Pakistan.

(b) Optimal size of GTs – the GTs have the capability of quick ramp-up and ramp-down on the request of the Power Purchaser. Additionally, the full plant load may be achieved within a few hours.

(c) Black-start Facility as highlighted in Section 3.1.6 of this Tariff Petition.

(d) Power Transformation – the only IPP having 220/132 kV power transformation capability.

(e) Fuel Storage – the largest mid-country fuel storage and treatment facility.

(f) Dedicated gas pipelines (rated capacity 350 MMCFD) for operations of the Facility.

(g) Excellent relationships with all the key banks and financial institutions.

4.5 THE NEW PPA TERM – A COST-EFFECTIVE PROPOSITION

4.5.1 It is submitted that with the current state of the well-maintained and 'debt free' Facility and minimum capital expenditures required for the continued operation of the Facility; the consumers will ultimately benefit from the low cost of electricity supplied by the Petitioner during the period of the New PPA Term. Further, the availability of such a big base load plant at a minimum cost will benefit the end consumers especially in case of energy security issues.

4.6 ALL REQUISITE INFRASTRUCTURE & ARRANGEMENTS ALREADY IN PLACE

4.6.1 Unlike the complexities and long gestation periods involved in the development of a new power generation facility, the Project, has remained operational for over 25 years, has all necessary infrastructure in place to continue power generation for servicing the consumers of one of Pakistan's largest cities. It is noted that implementation of the New PPA Term will neither require a financial close from lenders nor construction of any new transmission lines.

4.7 DEVELOPMENT & CONTINUED DEPLOYMENT OF EXCEPTIONAL HUMAN RESOURCES

4.7.1 The Petitioner has, over the years, developed highly skilled, experienced and exceptional human capital, which continues to form the backbone of the Project's success and excellence. One of the reasons behind this high skill set is the continuous learning culture, which provides that employees undergo a variety of learning programs throughout their tenor with the Petitioner. These opportunities range from self-paced learning, like book reading from a variety of books available at the Petitioner's organizational development (OD) book club to online training programs. Classroom training ranges from in-house training sessions to experiential learning programs being conducted in the remote locations to ensure a deeper level of learning associated with such programs.

4.7.2 The Petitioner takes keen interest in the development of its human resource using a blended learning approach, including face-to-face as well online programs. The program encompasses both functional as well as soft skills training programs to address the developmental needs from a holistic perspective. This approach focuses on the development of the individual as a person. As a result, the individuals experience a transformation in their lives and an up-gradation of their skill set, which positively affects business results. The Petitioner will continue to remain focused in its developmental efforts for its human resource for the future, as continuous improvement and development is the only way to thrive in a rapidly changing world.

4.7.3 The Petitioner focuses on fair and equitable opportunities to females and has established an independent hostel for females to support them in their service.

4.7.4 The Petitioner has the unique Facility having multiple technology generating Units (10 GTs and 5 steam turbines) with detail as below:

(a) Group-1: 4 Siemens units (GT-1,2,13,14) with 3 steam turbines (STG-9,10,15);

(b) Group-2: 4 GE units (GT 5 to 8) with 2 steam turbines (STG-11,12); and

(c) Group-3: 2 Fiat units with 2 steam turbines (STG-9,10).

4.7.5 The Petitioner at an outset is a tri-fuel energy complex, having 3 units of multi-technology; this is a unique scenario and a challenge in itself. These units have a significant difference in their design, operational methods, hardware, software and logic control systems. This differentiates their technicality in terms of operational scenarios for startups, base loading, shutdowns and response to grid parameters having entirely different alarm and protection systems.

4.7.6 Accordingly, different kinds of human skills specific to the operating units are required which is unconventional but effective, keeping in view the aging factor as well. Hence, our manpower approach focuses on a careful combination of an experienced team and a specialized talent pipeline custom-trained (classroom and job training) to the needs of units. Based on our experience, over the years, the average time required by a resource is around three years to become competent to execute tasks in terms of operation and maintain one set of machines. Further, the employees go through cumbersome training around the year improving their technical and soft skills linked with an effective job rotation mechanism in place.

4.7.7 For a dependable capacity of around 1345 MW, having 15 generating units and a 132kV/220kV Switchyard Facility, we have three independent control rooms, a large chemical and fuel department, therefore the headcount requirements are unique and more than any other power plant in the country.

4.8 CSR ACTIVITIES

4.8.1 The Petitioner, having acknowledged its responsibility towards the society in general and the local communities routinely participates in various CSR activities, including in sectors of healthcare, education, sports, environment etc. The Petitioner has contributed towards social causes to provide relief for those affected by natural disasters such as earthquakes and floods, etc. Over the years, the Petitioner has humbly contributed the following amounts for the socio-economic benefits of the local region and well as at the national level:

Area	PKR in Million
Education	39.3
Health Care	34.0
General Welfare	21.6
Donations & Charity	123.9
Total	**218.8**

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4.8.2 Salient milestones by the Petitioner include but are not limited to following:

(a) Rehabilitation of the ICU ward at Tehsil Head Quarter Hospital, Kot Addu with the project cost of PKR 2 million.

(b) Construction of the fire and rescue station located at Kot Addu including the fire tender in 2009 with the project cost of PKR 8.85 million.

(c) Rehabilitation of 142-year old infrastructure of Govt. Boys High School No. 1, Kot Addu with a total project cost of PKR 11.2 million.

(d) Flood relief activities at Kot Addu during the devastating floods of 2010-11. The Petitioner provided its facility to step up the relief efforts with the joint collaboration of the Pakistan Army. Further, the Petitioner established command and control, the International Red Crescent (ICRC) Pakistan for food & other supplies. The Petitioner's contribution in testing times was PKR 30 million.

(e) The Petitioner has been organizing annual free medical camps for the local communities since 2004. The total patients facilitated are approximately 60,300 and eye surgeries of around 571 deserving individuals have been carried out. So far, the Petitioner's budget on this initiative has been PKR 31.7 million.

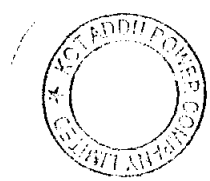
(f) Under the 'Power with Prosperity Initiative' of NEPRA, the Petitioner facilitated the construction of the school library at the Govt. Boys School Sheikh Umer, Kot Addu with the project cost of PKR 2.8 million. Additionally, the Petitioner also collaborated with the Akhuwat Islamic Microfinance to provide interest-free loan under the *Solar Support Initiative* with the project cost of PKR 5.0 million. So far approximately 62 beneficiaries have been facilitated which includes 59 male and 3 female beneficiaries.

4.8.3 The existence of the Petitioner in the remote areas of Kot Addu has made a very positive impact on the socio-economic upliftment of the surrounding areas in the form of creating employment opportunities for the local communities.

4.8.4 The Petitioner would continue to focus on the areas of healthcare, education, community development, and women empowerment. Also, the Petitioner actively foster initiatives that would aid improvement in the skills of the community, causing it to be self-sustainable.

4.9 SUPPORT TO GOP TO MANAGE CIRCULAR DEBT

4.9.1 Despite the financial difficulties created through the ever-increasing circular debt on the Project and the power sector as a whole, the Petitioner supported the Power Purchaser and the system by (i) securing extended working capital financing (worth tens of billions of rupees) from various banks and (ii) obtaining fuel on credit from fuel suppliers to make-up for the Power Purchaser's late payments.



SECTION 5
THE FACILITY

5. THE FACILITY

5.1 TECHNICAL SUMMARY

5.1.1 The Facility is Pakistan's largest combined cycle power plant, comprising 10 multi-fuel fired GTs and 5 steam turbines. The Facility was divided into 3 energy blocks (EB-I, EB-II, EB-III under the Original PPA) with each block having a combination of gas and steam turbines and a Switchyard Facility. However, for the purposes of this Tariff Petition and the New PPA, the Petitioner has bifurcated the Facility as follows:

(a) Plant 1 (inclusive of EB-I, EB-IIA, EB-IIB);

(b) Plant 2 (inclusive of EB-IIC and EB-III); and

(c) Switchyard Facility.

The revised plant configuration is provided under Section 5.1.4 of this Tariff Petition.

5.1.2 The Facility has a 1600 MW nominal CCGT power station comprising 5 independent combined cycle modules and associated ancillary plant together with an adjoining housing colony. Furthermore, the Facility has **"Black Start Capability"**, which enables it to start up the unit in order to energize part of system in case of a country wide blackout.

5.1.3 The Facility covers land measuring 3081 kanals and 10 marlas, out of which approximately 50% area is used for the Facility and the 50% area comprises housing colony and allied infrastructure. The Facility is owned, operated and maintained by the Petitioner, for over 2 and half decades. The Facility has been a source of supply of reliable power generation for the Power Purchaser and is exemplary in the country's power sector. The Petitioner's CCGT was built in phases from 1985 to 1996 by WAPDA and is the largest IPP operating in the mid country and supplying electricity through 6 x 132 kV and 6 x 220 kV feeders. Additionally, the Facility is the only CCGT power plant capable of operating on 3 different types of fuel, namely, Gas (RLNG), LSFO and HSD.

Briefly, the salient technical features of the Facility, as certified and confirmed in the detailed and exhaustive RULA Report are provided below for the Authority's reference:

FACILITY GROSS CAPACITY (ISO)	1600 MW
NET DEPENDABLE CAPACITY (RSC)	1345 MW *
FUEL & TECHNOLOGY	Gas (RLNG), LSFO & HSD, CCGT
FACILITY CONFIGURATION	Attached as **Annexure P**
FACILITY REMAINING USEFUL LIFE	More than 10 Years as per RULA Report

*The Facility is maintained according to the best international utility practices and the Annual Dependable Capacity ("**ADC**") of the Facility is still in excess of Initial Dependable Capacity ("**IDC**"). In the last ADC test carried out on August 06, 2021, the ADC was 14 MW in excess of IDC.

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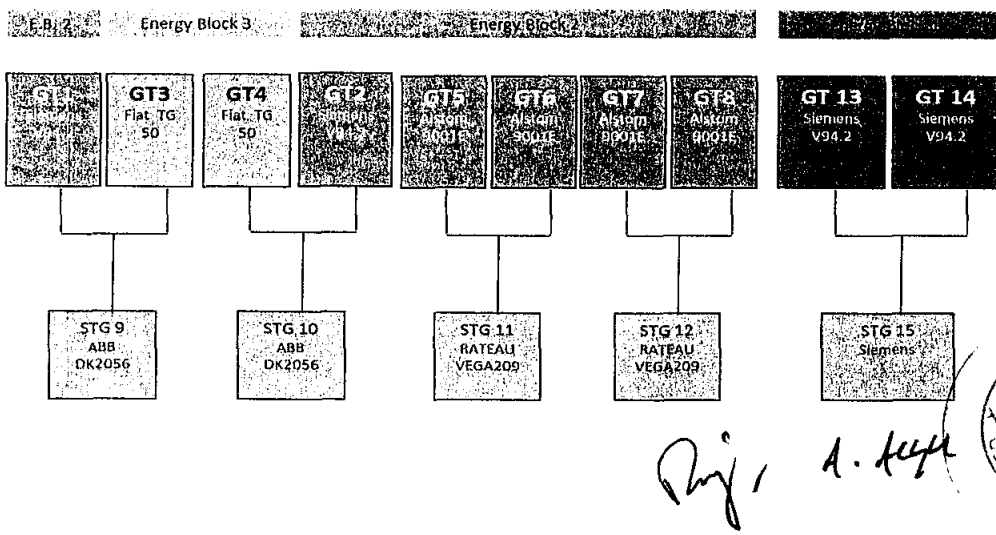
5.1.4 Below is the summary of GT and STG:

Details of Units						
Unit	**Type**	**Manufacturer**	**Model**	**Date of Commissioning**	**ISO Gross Capacity MW**	**Gas Turbine Fuel Capability**
GT-1	Gas Turbine	KWU Germany	V94.2 Version.1	18-Jan-87	100	Gas, LSFO & HSD
GT-2	Gas Turbine	KWU Germany	V94.2 Version.1	14-Jan-87	100	Gas, LSFO & HSD
GT-3	Gas Turbine	Fiat Italy	TG50	12-Mar-87	90	Gas & HSD
GT-4	Gas Turbine	Fiat Italy	TG50	02-May-87	90	Gas & HSD
GT-5	Gas Turbine	Alsthom France	MS9001 E	14-Nov-88	100	Gas, LSFO & HSD
GT-6	Gas Turbine	Alsthom France	MS9001 E	29-Dec-88	100	Gas, LSFO & HSD
GT-7	Gas Turbine	Alsthom France	MS9001 E	19-Jan-89	100	Gas, LSFO & HSD
GT-8	Gas Turbine	Alsthom France	MS9001 E	24-Apr-89	100	Gas, LSFO & HSD
GT-13	Gas Turbine	Siemens Germany	V94.2 Version.3	12-Oct-94	110	Gas, LSFO & HSD
GT-14	Gas Turbine	Siemens Germany	V94.2 Version.3	19-Oct-94	110	Gas, LSFO & HSD
STG-9	Steam Turbine	ABB Germany	DK2056	28-Jan-91	100	N/A
STG-10	Steam Turbine	ABB Germany	DK2056	08-Mar-91	100	N/A
STG-11	Steam Turbine	Alsthom France	VEGA209 110B	04-Mar-95	130	N/A
STG-12	Steam Turbine	Alsthom France	VEGA209 110B	05-Apr-95	130	N/A
STG-15	Steam Turbine	Siemens Germany	T-7639	10-Sep-96	140	N/A

Existing Plant Configuration:



Revised Plant Configuration:

Original Energy Block*	Revised Energy Block	GTs/STGs	Capacity (RLNG)	Capacity (LSFO/HSD)	Plant Reference
EB-I	EB-I	GT: 13-14, STG: 15	347 MW	[illegible] MW	Plant-1
EB-II	EB-IIA	GT: 1-2, STG: 9/10*	298 MW	289 MW	Plant-1
	EB-IIB	GT: 7-8, [illegible] STG: 12	217 MW	[illegible] MW	Plant-1
	EB-IIC	GT: 5-6 STG: 11	236 MW	228 MW	Plant-2
EB-III[7]	EB-III	GT: 3-4, STG: 9/10*	[illegible] MW	[illegible] MW	Plant-2

* Respective share of steam turbine (STG 9/10)

Switchyard Facility was an integral part of the Generatio Facility under the Original PPA (i.e., composite tariff), however, through this Tariff Petition, the Switchyard Facility is treated separately from the Generation Facility.

5.2 SWITCHYARD FACILITY

5.2.1 The Petitioner has been maintaining the Switchyard Facility with 2 high voltage switchyards which are being operated at 2 voltage levels i.e., 132 kV and 220 kV. The 220 kV switchyard is configured as a double bus bar, one and a half breaker scheme. Such an arrangement provides an additional level of security and reliability. The 132 kV switchyard has a double bus bar, single breaker system in line with normal grid configurations. The Switchyard Facility has total 30 bays, out of which 12 bays are of 220 kV and 18 bays are of 132 kV. A total of 12 transmission lines emanate from the Switchyard Facility, including 6 lines at 132 kV system and 6 lines at 220 kV system.

5.2.2 The following 6 220 kV transmission lines are emanating from the Petitioner's grid which run to Multan, Muzaffargarh and PAKGEN grids. 9 units generate power at 11 kV, which is stepped up to 220 kV through 9 main unit transformers and subsequently supplies power to the national grid system:

Sr.	220 kV Transmission Lines	
1.	220 kV Circuit -1	250 MW (KAPCO to TPS Muzaffargarh)
2.	220 kV Circuit -2	250 MW (KAPCO to PAKGEN Powerhouse)
3.	220 kV Circuit -3	250 MW (KAPCO to New Multan)
4.	220 kV Circuit -4	250 MW (KAPCO to New Multan)
5.	220 kV Circuit -5	350 MW (KAPCO to New Multan)
6.	220 kV Circuit -6	350 MW (KAPCO to New Multan)
Total Transmission Capacity		1700 MW

[7] *EB-III capacity is on HSD as it has no provision of LSFO burning.*

5.2.3 The following 6 132 kV transmission lines are connected with 17 local area 132 kV grids and are feeding to large areas of Kot Addu, Muzaffargarh, Layyah, Chowk Azam, Rang Pur, Noor Ahmad Wali, Shadan Lund and Taunsa Sharif:

Sr.	132 kV transmission Lines	
1.	132 kV Feeder KAP-4	100 MW (KAPCO to Bagha Shair Muzaffargarh)
2.	132 kV Feeder KAP-5	100 MW (KAPCO to Muzaffargarh)
3.	132 kV Feeder KAP-6	100 MW (KAPCO to Muzaffargarh via PARCO)
4.	132 kV Feeder KAP-7	100 MW (KAPCO to Shadan Lund / Taunsa Sharif)
5.	132 kV Feeder KAP-8	200 MW (KAPCO to Kot Addu)
6.	132 kV Feeder KAP-9	200 MW (KAPCO to Kot Addu)
Total Transmission Capacity		800 MW
Total transmission Capacity (132 kV + 220 kV)		**2500 MW**

5.2.4 The 2 switchyards (132 kV /220 kV) are interconnected by 4 autotransformers having total capacity of 400 MVA. The details of these autotransformers are provided below:

i. Autotransformer T-1&2: 2x100 MVA commissioned in 1985 and manufactured in 1976;

ii. Autotransformer T-5; 100 MVA commissioned in 2006; and

iii. Autotransformer T-6; 200 MVA commissioned in 2021 (which replaced autotransformer T-3&T-4)

5.2.5 The abovementioned autotransformers are mandatory to supply power mainly from 220 kV to 132 kV grid as all 132 kV feeders from the Petitioner's Switchyard Facility have a single source of supply. However, power can also be transferred from 132 kV to 220 kV. During summer, due to increased power demand at 132 kV side, these autotransformers are overloaded and power at 132 kV is augmented through the running of Petitioner's Energy Blocks EB-IIA & EB-III.

A copy of the Single Line Key Diagram (SKLD) is attached as ***Annexure Q.***

5.2.6 These 2 grids always remain energized and functional irrespective of plant generation level for power transmission and distribution for the national grid system and for the local area network. The Petitioner has to deploy considerable resources both in the field of human resources and in the maintenance of all allied equipment of the Switchyard Facility. The Petitioner will also have to replace the aging equipment and autotransformers of the Switchyard Facility in the coming year. For smooth operations and to ensure reliability of the Switchyard, the Petitioner has to incur significant costs. Therefore, an appropriate compensation including return on equity is requested hereby for the approval of the Authority

5.3 STRATEGIC AND DISTINGUISHABLE FEATURES OF THE FACILITY

5.3.1 In addition to the above, certain key and salient features of the Facility are summarised as follows:

i. **Black-start Facility:** The Petitioner has BSDG set with 3 MW capacity provided with an automatic start capability for operation in the event of total power failure and is connected via dedicated bus bar to common 11 kV bus bar serving GT-5 to GT-8 for recovery from country wide blackout which has been duly demonstrated in recent blackouts as mentioned in Section 4.1.3.

ii. **Fuel Oil Facility:** The Petitioner has dedicated a 32 km oil pipeline with 10-inch diameter at rated capacity of 3,800 tonnes per day from PSO's Lalpir Depot to the Generation

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Facility. Site storage facility comprises 27 tanks each of 8,000 cubic metre capacity out of which 22 tanks are for LSFO storage and 5 tanks are designated for HSD storage. LSFO storage capacity is 156 kilo tonnes and HSD storage tanks capacity is 40 million litres. The Petitioner has also direct decantation facility with 20 bays for backup use. The fuel oil cannot be directly burned in GTs as it contains certain trace metals specially sodium & potassium that must be removed before burning in GTs by using fuel oil treatment plants ("**FOTPs**"). The process for fuel oil treatment in FOTPs includes mixing of water in oil and then separation of added water, which has absorbed trace metals. There are 6, European origin FOTPs with a total capacity of 370 cubic metre per hour. The oil treated by FOTPs is stored in the treated tanks for feeding to GTs.

iii. **Fuel Flexibility:** The Generation Facility is a multi-fuel gas-turbine power plant with the capability of using three different fuels to generate electricity, namely: Gas (RLNG), LSFO and HSD. The GTs operate on selection of fuels including gas, LSFO and HSD with on load change over fuel provision. When not operating on Gas (RLNG), 8 GTs can operate on LSFO and HSD. Similarly, 2 GTs of EB-III when not operating on Gas (RLNG), are capable of operating solely on HSD.

iv. **LSFO:** The Generation Facility is the only CCGT plant, in Pakistan, which can burn furnace oil in GTs. The Generation Facility has been consuming indigenous LSFO by local refineries and will support critical refinery operations in the country.

v. **Gas Pipeline:** SNGPL had laid down 2 gas pipelines main supply network with capacity of 350 MMCFD to supply gas to the Petitioner's units. SNGPL has laid down 1 gas pipeline from Dhodak gas field. Consumer metering station is located at the Petitioner's premises which is owned and operated by SNGPL. When 10 GTs are operated at base load during winter, units' consumption will be approximately 300 MMCFD. Thus, maximum gas pipeline capacity is sufficient to run the Generation Facility.

vi. **Water System:** Raw water is sourced from two sources: (i) canal water is fed from Muzaffargarh canal from the river Indus via Taunsa Barrage and (ii) ground water. Water taken from canal system is treated through clarifiers. In addition to demineralization plants where dissolved salts are removed, RO plant was installed for availability of water for combined cycle.

vii. **Firefighting System:** A well-designed fixed firefighting system is installed with 2 water storage tanks each of 700 cubic metre capacity supplied from ground water. 2 electric driven pumps each of 550 m^3 capacity, 1 Diesel driven fire pump of 1,100 m^3 capacity. Additionally, automatic fire protection CO_2 system for GT enclosures and water deluge system for the main transformers is installed. Manual hydrant facilities for main plant, central control rooms and other buildings. Manual foam facilities along with manual systems for external cooling of fuel oil storage tanks. There are 2 fire tenders available on site which not only support the Petitioner but also the local community in case of any emergency (in case the emergency is not manageable by the fire tender given to local administration under CSR).

viii. **Stores and Fuel Inventory:** The Petitioner has large inventory of spare parts with total line items of around 37,000 and will not require any substantial imports in the years to come. Further, the Petitioner carries a reasonable fuel inventory (LSFO) which will be used to support the system without any further burden on foreign reserves, as soon as the Authority gives the tariff determination and the New PPA is signed.

5.3.2 Considering these facts and the conclusion drawn in the RULA Report, it is evident the Facility has a remaining useful life of 10 years. Thus, the Petitioner submits to the Authority as follows:

i. Given the remaining useful life of the Facility (as highlighted above in Section 5.1.3), the Petitioner requests the approval of the New PPA Term on a co-terminous basis (subject to renewal / extension, as mutually agreed between the Petitioner and the Power Purchaser) in respect of the Facility;

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ii. Approve sale of electric power to the Power Purchaser in terms of the Reference Generation Tariff; and

iii. That the Switchyard Facility Charges, as detailed in Section 12 shall be approved.

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SECTION 6
THE GENERATION LICENSE

6. THE GENERATION LICENSE

6.1 THE GENERATION LICENSE

6.1.1 On September 22, 2004, in exercise of the powers conferred upon by NEPRA under Section 15 of the NEPRA Act, the Authority granted a generation license to the Petitioner.

6.1.2 Pursuant to Rule 5 of the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 ("**NEPRA Generation Rules**"), the Generation license No. IPGL/020/2004 dated September 22, 2004 (the "**Original Generation License**") was granted for a term of 17 years ending on September 21, 2021.

*A copy of the Original Generation License is attached as **Annexure R**.*

6.2 THE RENEWAL OF THE GENERATION LICENSE

6.2.1 It is highlighted for the Authority's benefit that the Petitioner previously submitted an application dated June 24, 2021 (the **"Application for Generation License Extension"**) for the renewal of its Original Generation License. The reason for submission of the Application for Generation License Extension was to amend Article 4 of the Original Generation License which stated that the "*License is granted for a term of seventeen (17) years*". The request for an extension of the term consisted of the following:

> "*Pursuant to Rule 5 of the Rules, this License is granted for a further term of ten (10) years and the total term of this license is twenty-seven (27) years i.e. until September 21, 2031.*"

Hence, the purpose of the application was to extend the term of the Original Generation License for a further period of 10 years in order to bring the same in line with the remaining useful life of the Facility (that is, till September 21, 2031).

6.2.2 Pursuant to Section 26 of the NEPRA Act, the Authority's approval in relation to the Application for Generation License Extension was received by the Petitioner *vide* the Authority's approval dated September 08, 2022 (the **"Renewed Generation License"**) through which the term of the Original Generation License of the Petitioner was extended up to September 21, 2024. Additionally, the Renewed Generation License also amended Article 5 of the Original Generation License by replacing the NEPRA (Fees) Rules, 2002 with the NEPRA (Fees) Regulations, 2021.

*A copy of the Renewed Generation License is attached as **Annexure S**.*

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SECTION 7
REFERENCE GENERATION TARIFF AND SWITCHYARD FACILITY CHARGES SUMMARY

7. REFERENCE GENERATION TARIFF AND SWITCHYARD FACILITY CHARGES SUMMARY

7.1 THE REFERENCE GENERATION TARIFF COMPONENTS

7.1.1 In view of the Authority's previous tariff determinations and as per the prevailing regime, the Reference Generation Tariff for Plant 1 and Plant 2 is broken down in the following key components:

(a) the energy purchase price component of the Reference Generation Tariff (the "**Energy Purchase Price**") in respect of Plant 1 and Plant 2; and

(b) the capacity purchase price component of the Reference Generation Tariff (the "**Capacity Purchase Price**") in respect of Plant 1 and Plant 2.

7.1.2 Considering the re-configuration (as detailed in Section 5.1.4 of this Tariff Petition) of the Generation Facility in terms of technology, the Reference Generation Tariff is being requested separately for the following:

(a) Energy Block I, Energy Block IIA and Energy Block IIB (i.e., Plant 1) on **Take or Pay** basis; and

(b) Energy Block IIC and Energy Block III (i.e., Plant 2) on **Take and Pay** basis.

7.2 KEY FACTORS OF PLANT 1

7.2.1 The Petitioner is seeking the Reference Generation Tariff for Plant 1 on Take or Pay basis to ensure complete recovery of its fixed costs, cost of working capital and return on equity. Some of the key factors substantiating the Petitioner's requests are as follows:

(a) Criticality of the Facility for overall energy security of the country. NTDC's board of directors has specifically approved the retention of EB-I and EB-IIA for system requirements.

(b) Black-start Facility is integrated with EB-IIB and is hence, necessary to be retained to ensure availability in case of country wide blackout.

(c) The Petitioner has evolved its in-house capacity to carry out quality operations and maintenance, which cannot be considered redundant or replaceable at periodic intervals given the size and diverse technology configuration.

(d) Given the size, complexity and historical utilization pattern, it is essential to continue to retain the skilled and experienced resources (including human resource, security, third party contractors and support functions) for smooth and reliable operations.

(e) A recurring, verifiable and transparent fixed cost profile, which is to be incurred from the first day of the New PPA.

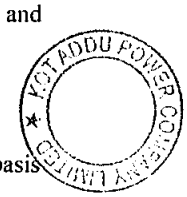
(f) The requirement to generate minimum guaranteed funds to settle obligations towards working capital financiers.

(g) Since the Petitioner is a public listed company, therefore, is obligated to preserve the shareholders' value and ensure legitimate return on investment.

(h) The Project is brownfield in nature and debt-free, thus making it more economical in terms of Capacity Purchase Price in comparison to greenfield projects of similar size and technology.

7.3 KEY FACTORS OF PLANT 2

7.3.1 The Petitioner is seeking the Reference Generation Tariff for Plant 2 on Take and Pay on the basis



of the following key factors:

(a) In respect of Plant 2, EB-IIC units (GT-5, GT-6 & STG-11, Capacity 236 MW) are connected to 220 kV grid and these units have a thermal efficiency above 43% and are capable to run on a tri-fuel basis. The Petitioner foresees that these units will also be required to be operational to fulfill the grid demand. Moreover, the running of these units on LSFO fuel will be required during the scarcity of RLNG, resulting in unavailability of plants operating on RLNG.

(b) In respect of Plant 2, EB-III units (GT-3, GT-4 & STGs) are connected to the 132 kV grid and the Petitioner foresees that these units will also be operating to provide additional electric power to the grid. As further elaborated in the MEPCO letter dated August 11, 2021 (*attached as **Annexure E***) and NPCC letter dated November 20, 2020 (*attached as **Annexure F***), these units are used to support the 132 kV grid in case EB-IIA is down, thus requiring its retention in the system.

7.4 SWITCHYARD FACILITY CHARGES

7.4.1 The sustainability and transformation charges relating to the Switchyard Facility ("**Switchyard Facility Charges**") are as per the costs claimed under Section 12 of this Tariff Petition.

7.5 KEY FACTORS OF THE SWITCHYARD FACILITY

7.5.1 The Petitioner is seeking the Switchyard Facility Charges on the following key factors:

(a) The Switchyard Facility has to be operational irrespective of the generation level from Plant 1 and Plant 2.

(b) The Switchyard Facility is one of its kind with 2 voltage levels and 12 transmission lines with a transmission capacity of more than 2500 MW.

(c) The Switchyard Facility has 4 autotransformers with a total capacity of 400 MVA.

(d) The Switchyard Facility is required on a permanent basis without any expiry as confirmed by NTDC *(reference to the NTDC's letter attached as **Annexure L**).*

It is pertinent to highlight that, upon request of the NTDC / system operator and MoE, the Petitioner has kept the Switchyard Facility available for continued utilization by both NTDC and MEPCO since expiry of the Original PPA without any compensation (which accumulates to a total of approximately PKR 303 million to date including insurance premium, other fixed and variable costs and required ROE of PKR 193 million from October 25, 2022 to February 28, 2023) to the Petitioner. Therefore, the Petitioner requests the honorable Authority to allow the Switchyard Facility Charges in accordance with Section 12 of this Tariff Petition in addition to the reimbursement of above-mentioned amount of PKR 303 million (adjustable to the actual date of commencement of new PPA). The break of these charges is as follows:

Description	PKR in Million
Salaries, wages and benefits	32.5
Insurance cost	16.4
Third party contract services cost	2.0
Security and health related expenses	4.2
Auxiliary cost	1.0
Maintenance and replacement costs	16.7
Other fixed O&M costs	8.6
Energy transformation losses (variable cost)	29.0
ROE	192.8
Total actual compensation (from October 25, 2022 to February 28, 2023)	**303.2**

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7.6 SUMMARY

7.6.1 Net dependable capacities (at reference site conditions) assumed for combined cycle operations on RLNG, LSFO and HSD are as follows:

Net capacity (MW)	Gas/RLNG	LSFO	HSD
Plant 1			
Energy Block I	347	334	334
Energy Block IIA	298	289	289
Energy Block IIB	247	236	236
Plant 2			
Energy Block IIC	236	228	228
Energy Block III	258	Not applicable	249

7.6.2 As explained in Section 3, keeping in view the gas availability constraints and utilization of the Facility envisaged under approved IGCEP 2022-2031, an average load factor of 30% has been assumed for the purposes of tariff computation.

7.6.3 The proposed Reference Generation Tariff at 30% assumed load factor is hereunder:

PLANT 1	ENERGY PURCHASE PRICE PKR/kWh	CAPACITY PURCHASE PRICE PKR/kW/h (@ 30% load factor	TOTAL REFERENCE GENERATION TARIFF PKR/kWh
Gas / RLNG			
ENERGY BLOCK I	28.4578	5.2936	33.7514
ENERGY BLOCK IIA	30.6851		35.9787
ENERGY BLOCK IIB	30.1558		35.4494
LSFO			
ENERGY BLOCK I	23.4265	5.3784	28.8049
ENERGY BLOCK IIA	24.9567		30.3351
ENERGY BLOCK IIB	24.5277		29.9061
HSD			
ENERGY BLOCK I	64.3231	5.3589	69.6820
ENERGY BLOCK IIA	69.3862		74.7451
ENERGY BLOCK IIB	68.6640		74.0229

PLANT 2	ENERGY PURCHASE PRICE PKR/kWh	CAPACITY PURCHASE PRICE PKR/kW/h (@30% load factor	TOTAL REFERENCE GENERATION TARIFF PKR/kWh
Gas / RLNG			
ENERGY BLOCK IIC	30.3166	4.7231	35.0397
ENERGY BLOCK III	32.0890		36.8121
LSFO			
ENERGY BLOCK IIC	24.8629	4.6736	29.5365
ENERGY BLOCK III	No Provision on LSFO		
HSD			
ENERGY BLOCK IIC	68.8500	4.8306	73.6806
ENERGY BLOCK III	72.4878		77.3184

7.6.4 The proposed Switchyard Facility Charges are provided hereunder:

Energy Transformation Expenses (PKR/kWh)	Fixed O&M and ROE			
	Fixed O&M local (PKR/kW/ Month)	Fixed O&M foreign (PKR/kW/ Month)	ROE (PKR/kW/ Month)	Total (PKR/kW/ Month)
0.0512	36.7101	47.6230	134.9250	219.2581

7.6.5 Following key indexations and escalations are being requested:

Tariff component	Indexation
Fuel	Fuel price
Variable O&M (Local)	National CPI
Variable O&M (Foreign)	US CPI and PKR/USD exchange rate
Fixed O&M (Local)	National CPI
Working Capital Cost	KIBOR and fuel price
Return on Equity	National CPI
Fixed O&M for Switchyard Facility (Local)	National CPI
Fixed O&M for Switchyard Facility (Foreign)	US CPI and PKR/USD exchange rate

7.6.6 **Pass-through items:**

In addition to the pass-through items stipulated in the similar precedent power purchase agreements for thermal projects selling electric power to the national grid and in the Tariff Petition herein, any taxes (including but not limited to corporate taxes, minimum turnover tax, alternate corporate tax etc.) duties and levies, Workers Welfare Fund, Workers Profit Participation Fund, Terrorism, Sabotage and all risk insurance coverage during operations, water use charges, if applicable, and/or governmental impositions of whatsoever nature; and financing cost of any other instruments required under the FSA / OSA, not factored in the Reference Generation Tariff calculation will be treated as part of the Project / operating cost as per actual basis and will be passed through to the Power Purchaser.

Further, the Petitioner requests to allow reimbursement of pass-through items within a month of the actual payment / invoice date.

7.6.7 **Actual Heat rate determination/ adjustments:**

To be fair and transparent, Petitioner has request to review and determine the actual heat rates of the generation facility for the purpose of new PPA. In the past, the Petitioner has faced significant loss due to under recovery of fuel cost. Accordingly, in order to financially sustain under the extended term, it is critical for the Petitioner to have a tariff determination based on actualized heat rate as per third party heat rate test to be carried out within 3 months from the New PPA Commencement Date. The adjusted heat rate shall be applicable from the New PPA Commencement Date.

The actual heat rate loss only for the last 5 years ran into billions of PKR.

7.6.8 **Other adjustments and incentives:**

In addition to the recurring adjustments stipulated in similar precedent power purchase agreements for thermal projects selling electric power to the national grid, the Petitioner is requesting adjustments for:

(a) Costs incurred in respect of startups under the New PPA.

(b) Heat rate degradation based on heat rate testing under Section 7.6.7

(c) Output degradation based on annual dependable capacity testing.

(d) Ambient site conditions.

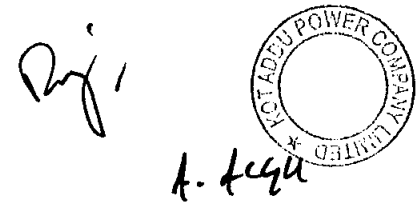
(e) Part load adjustment (as specified in **Annexure T**).

(f) Heat rate adjustment of 3% relating to operations under the half module (1 GT + half ST).

(g) Credit period / SBLC arrangement agreed with the fuel suppliers under the respective fuel supply agreements.

7.7 **THE REFERENCE GENERATION TARIFF TABLE AND SWITCHYARD FACILITY CHARGES**

7.7.1 For the Authority's benefit and approval, the detailed tables setting out the Reference Generation Tariff (the "**Reference Generation Tariff Table**") separately for Plant 1 and Plant 2 and the Switchyard Facility Charges are attached as **Annexure U**.



SECTION 8
CAPACITY PURCHASE PRICE – PLANT 1

8. CAPACITY PURCHASE PRICE - PLANT 1

8.1 SUMMARY

8.1.1 The Capacity Purchase Price component of the Reference Generation Tariff is payable on the basis of available capacity declared periodically from the New PPA Commencement Date. This component is calculated on PKR/kW/h basis at an assumed load factor of 30%. The Capacity Purchase Price component of the Reference Generation Tariff comprises of the following components:

(a) the fixed operations and maintenance cost (the "**Fixed O&M Cost Component**");

(b) the cost of working capital (the "**Cost of Working Capital Component**"); and

(c) the return on equity (the "**ROE**").

8.1.2 A summary of the Capacity Purchase Price component of the proposed Reference Generation Tariff is provided in the table below:

Gas / RLNG:

Capacity Purchase Price (PKR/kWh) @ 30% load factor				
Year	**Fixed O&M local**	**Cost of W/C**	**ROE**	**Total CPP**
1	1.1285	1.1155	3.0495	5.2935
2	1.1285	1.1155	3.0495	5.2935
3	1.1285	1.1155	3.0495	5.2935
4	1.1285	1.1155	3.0495	5.2935
5	1.1285	1.1155	3.0495	5.2935

LSFO:

Capacity Purchase Price (PKR/kWh) @ 30% load factor				
Year	**Fixed O&M local**	**Cost of W/C**	**ROE**	**Total CPP**
1	1.1719	1.0398	3.1667	5.3784
2	1.1719	1.0398	3.1667	5.3784
3	1.1719	1.0398	3.1667	5.3784
4	1.1719	1.0398	3.1667	5.3784
5	1.1719	1.0398	3.1667	5.3784

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HSD:

Capacity Purchase Price (PKR/kW/hr) @ 30% load factor				
Year	**Fixed O&M local**	**Cost of W/C**	**ROE**	**Total CPP**
1	1.1719	1.0203	3.1667	5.3589
2	1.1719	1.0203	3.1667	5.3589
3	1.1719	1.0203	3.1667	5.3589
4	1.1719	1.0203	3.1667	5.3589
5	1.1719	1.0203	3.1667	5.3589

8.2 LOCAL FIXED O&M COST COMPONENT

8.2.1 Assumptions

The Local Fixed O&M Component of the Capacity Purchase Price represents the fixed costs of the management and staff of the Generation Facility; fixed cost of staff for operations and maintenance and firefighting; plant administration; security; transportation and medical benefits; overheads; office costs; environmental monitoring fee, professional fees such as audit, tax and legal; standby auxiliary consumption; as well as other fixed operational costs that are of recurring nature and do not change with dispatch levels.

Since the operations of the Generation Facility are being managed centrally through an in-house team of the Petitioner, given the size, complexity, ageing and diversity of technology across Energy Blocks, it is imperative for the Petitioner to retain its existing operating model for reliable operations during extended tariff control period.

The projected Fixed O&M costs being claimed by the Petitioner, along with the underlying basis are as follows:

Total Fixed Cost	**FY22 (PKR million)**	**Requested (PKR million)**	**Basis**
Salaries, wages, and benefits	1,397.4	1,454.1	As per actual
Health and medication	100.2	131.3	
3rd party contract services	103.8	128.0	
Standby auxiliary consumption	143.7	425.0	As per prevalent tariff and expected consumption
Site infrastructure maintenance & running	92.2	114.9	As per actual, subject to recent inflationary trend adjustment
Other expenses	333.5	392.2	As per actual, subject to inflationary trend
Total	**2,170.8**	**2,645.5**	

As can be seen from the table presented above, requested FOM cost is entirely local in nature, not requiring any exchange rate adjustments and is fairly aligned with the actual historical cost for FY 2022.

8.2.2 **Indexation & Escalation**

The following indexation shall be applicable to the Local Fixed O&M Cost Component:

(a) The Local Fixed O&M Cost Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

8.2.3 **Indexation Formula**

The Local Fixed O&M Cost Component shall be quarterly indexed based on the following formula:

LFO&M $_{(LRev)}$	=	**LFO&M $_{(LRef)}$ * CPI $_{(REV)}$ / CPI $_{(REF)}$**
Where:		
LFO&M $_{(LRev)}$	=	The revised Local Fixed O&M Component of Tariff
LFO&M $_{(LRef)}$	=	The reference Local Fixed O&M Component of Tariff
CPI $_{(REV)}$	=	The revised National CPI
CPI $_{(REF)}$	=	The reference National CPI

8.3 COST OF WORKING CAPITAL COMPONENT

8.3.1 **Assumptions**

The Petitioner has estimated its working capital requirement based on 25 days fuel payment (Gas (RLNG) or LSFO, as applicable) receivable from the Power Purchaser (inclusive of GST), computed at 30% load factor. Additionally, LSFO inventory equivalent to 15 days of generation at 60% load factor has been assumed. Cost of short-term borrowing has been assumed at 3-month KIBOR + 2%. Further, cost of 30 days SBLC, both for Gas and LSFO (at the rate of 1.5% per annum) has been assumed as part of the working capital cost.

Final terms to be agreed with the fuel suppliers are requested to be allowed as one-time adjustment to the Petitioner.

8.3.2 **Indexation & Escalation**

The Cost of Working Capital Component of the Capacity Purchase Price shall be quarterly indexed to both:

(a) the fuel price variation, as notified by the relevant authority / entity; and

(b) the quarterly changes in the 3-month KIBOR.

8.4 THE ROE

8.4.1 **Assumptions**

The Petitioner was privatized with WAPDA divesting 36% of its shareholding in the Petitioner. The Petitioner had an issued and paid-up capital of PKR 8.8 billion comprising 880.25 million shares of PKR 10 each. Since then, there has been no change in the issued and paid-up capital of the Petitioner. According to the Audited Financial Statements for FY22 (*attached as **Annexure V***), total shareholders' equity as of June 30, 2022 is PKR 68,595.91 million. However, the Petitioner

has calculated requested ROE component using equity value of PKR 42,050.6 million allocated to Plant 1, on the following basis:

Description	Unit	Amount
Issued share capital in 1996	PKR million	8,802.5
Equivalent investment @ 34.25 PKR to USD	USD million	257.0
Investment allocated to Plant 1 based on capacity	USD million	157.6
Converted equity investment for Plant 1	PKR million	42,050.6
Return on Equity ("ROE") @ 17.0% p.a.	PKR million	7,148.6
ROE component – at Gas / RLNG	PKR / kWh	3.0495
ROE component – at LSFO	PKR / kWh	3.1667
ROE component – at HSD	PKR / kWh	3.1667

As part of privatization process, 36% shareholding of the Petitioner was divested at a value of USD 291 million, thus translating into total equity valuation of over USD 800 million, which is significantly higher than the equity investment value assumed for the purpose of ROE component computation.

The ROE of 17.0% is being requested based on following factors:

- Higher prevailing KIBOR rates (e.g., 3m KIBOR has reached at 20.83% on 06 March 2023), which effectively translates into cost of debt over 22.8%;
- Annual CPI of 21.32% for FY22 published by Pakistan Bureau of Statistics, with an increasing trend in recent months, the highest being in February 2023 i.e. 31.5%
- Applicability of higher dividend tax (at the rate of 15%) on shareholders of the Petitioner without any pass-through coverage in the tariff;
- Higher opportunity cost due to increased country risk premium; and
- The Petitioner (including the Project sponsors) will be bearing additional risks and exposure during the New PPA Term due to possible unavailability of the risk coverage previously provided by the Facilitation Agreement and the GOP Guarantee, which risk coverage may now be provided in the form of SBLC.

Further, needless to say, while the Authority also allows RoEDC to new projects, it is a component that is not requested by the Petitioner since its Project is already on ground - developed, constructed, established and implemented.

8.4.2 **Claw-Back Mechanism**

In line with recent precedents, the Petitioner offers incorporation of a claw-back mechanism for ROE in case the regulated return increases over 17% due to saving in other tariff components, if any, against the reference equity of PKR 46,272.60 million as per the following table:

Percentage of ROE	Sharing	
	Petitioner	Power Purchaser
Up to 17% of reference equity	100%	NIL
>17% but ≤ 20% of reference equity	50%	50%
>20% of reference equity	25%	75%

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8.4.3 **Indexation and Escalation**

The ROE Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

8.4.4 **Indexation Formula**

The ROE Component shall be indexed using the following formula:

$ROE_{(Rev)}$	=	**$ROE_{(Ref)} * CPI_{(REV)} / CPI_{(REF)}$**
Where:		
$ROE_{(Rev)}$	=	The revised ROE Component of Tariff
$ROE_{(Ref)}$	=	The reference ROE Component of Tariff
$CPI_{(REV)}$	=	The revised National CPI
$CPI_{(REF)}$	=	The reference National CPI

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SECTION 9
ENERGY PURCHASE PRICE – PLANT 1

9. ENERGY PURCHASE PRICE - PLANT 1

9.1 SUMMARY

9.1.1 The energy purchase price component of the Reference Generation Tariff (the "**Energy Purchase Price**") is based on the actual kWh off-take, and consists of:

(i) the fuel component (the "**Fuel Cost Component**"); and

(ii) the variable O&M component (the "**Variable O&M Cost Component**").

9.1.2 A summary of the Energy Purchase Price is provided in the following table:

Gas-RLNG:

Energy Block I				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	27.5469	0.1295	0.7815	28.4579
2	27.5469	0.1295	0.7815	28.4579
3	27.5469	0.1295	0.7815	28.4579
4	27.5469	0.1295	0.7815	28.4579
5	27.5469	0.1295	0.7815	28.4579

Energy Block IIA				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	30.0511	0.1371	0.4969	30.6851
2	30.0511	0.1371	0.4969	30.6851
3	30.0511	0.1371	0.4969	30.6851
4	30.0511	0.1371	0.4969	30.6851
5	30.0511	0.1371	0.4969	30.6851

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Energy Block IIB				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	29.6334	0.1238	0.3985	30.1557
2	29.6334	0.1238	0.3985	30.1557
3	29.6334	0.1238	0.3985	30.1557
4	29.6334	0.1238	0.3985	30.1557
5	29.6334	0.1238	0.3985	30.1557

LSFO:

Energy Block I				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	21.7845	0.2333	1.4087	23.4265
2	21.7845	0.2333	1.4087	23.4265
3	21.7845	0.2333	1.4087	23.4265
4	21.7845	0.2333	1.4087	23.4265
5	21.7845	0.2333	1.4087	23.4265

Energy Block IIA				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	23.5925	0.2950	1.0693	24.9568
2	23.5925	0.2950	1.0693	24.9568
3	23.5925	0.2950	1.0693	24.9568
4	23.5925	0.2950	1.0693	24.9568
5	23.5925	0.2950	1.0693	24.9568

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Energy Block IIB				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	23.3867	0.2705	0.8705	24.5277
2	23.3867	0.2705	0.8705	24.5277
3	23.3867	0.2705	0.8705	24.5277
4	23.3867	0.2705	0.8705	24.5277
5	23.3867	0.2705	0.8705	24.5277

HSD:

Energy Block I				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	63.3713	0.1353	0.8166	64.3231
2	63.3713	0.1353	0.8166	64.3231
3	63.3713	0.1353	0.8166	64.3231
4	63.3713	0.1353	0.8166	64.3231
5	63.3713	0.1353	0.8166	64.3231

Energy Block IIA				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	68.6308	0.1633	0.5921	69.3862
2	68.6308	0.1633	0.5921	69.3862
3	68.6308	0.1633	0.5921	69.3862
4	68.6308	0.1633	0.5921	69.3862
5	68.6308	0.1633	0.5921	69.3862

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Energy Block IIB				
Energy Purchase Price (PKR/kWh)				
Year	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total EPP
1	68.0322	0.1498	0.4820	68.6640
2	68.0322	0.1498	0.4820	68.6640
3	68.0322	0.1498	0.4820	68.6640
4	68.0322	0.1498	0.4820	68.6640
5	68.0322	0.1498	0.4820	68.6640

9.1.3 It is noted that after factoring the impact of fuel cleaning, average plant aging and variation in plant load factor, following net block wise efficiencies (LHV) at reference site conditions, and at 30% load factor have been considered for the Tariff Petition:

	Gas/RLNG	LSFO	HSD
Energy Block I	46.44%	45.54%	45.54%
Energy Block IIA	42.57%	42.05%	42.05%
Energy Block IIB	43.17%	42.42%	42.42%

9.2 FUEL COST COMPONENT

9.2.1 Assumptions

It is submitted that there will be separate fuel cost component for each fuel type and the energy invoice will be based on the applicable fuel and generation scenario.

The main assumptions used to derive at the Fuel Cost Component are provided below:

Gas/RLNG:

GAS PRICE:	USD 12.7148 per MMBtu (HHV), subject to adjustment as per actual). General Sales Tax ("**GST**") is not included in the Gas price and shall be a pass-through to Power Purchaser at actual
HEAT RATE:	7,752 KJ/kWh – Energy Block I 8,457 KJ/kWh – Energy Block IIA 8,339 KJ/kWh – Energy Block IIB
OUT PUT CAPACITY:	347.0 MW (net at Site reference conditions) – Energy Block I 298.0 MW (net at Site reference conditions) – Energy Block IIA 247.0 MW (net at Site reference conditions) – Energy Block IIB
LHV-HHV FACTOR	1.108732
GST ON FUEL	The actual GST charged on the Fuel Cost Component of Tariff is to be claimed at actuals from the Power Purchaser through monthly supplemental invoice.

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LSFO:

LSFO PRICE:	PKR 111,047.93 per ton (including transportation cost, subject to adjustments as per actuals). General Sales Tax ("**GST**") is not included in the LSFO price and shall be a pass-through to the Power Purchaser at actual
HEAT RATE:	7,905 KJ/kWh – Energy Block I 8,561 KJ/kWh – Energy Block IIA 8,487 KJ/kWh – Energy Block IIB
OUT PUT CAPACITY:	334.0 MW (net at Site reference conditions) – Energy Block I 289.0 MW (net at Site reference conditions) – Energy Block IIA 236.0 MW (net at Site reference conditions) – Energy Block IIB
CALORIFIC VALUE:	40,297.0 KJ/Kg
LHV-HHV FACTOR	1.06

HSD:

HSD PRICE:	PKR 280.75 per litre (including transportation cost, subject to adjustments as per actuals). General Sales Tax ("**GST**") is not included in the Gas price and shall be a pass-through to the Power Purchaser at actual
HEAT RATE:	7,905 KJ/kWh – Energy Block I 8,561 KJ/kWh – Energy Block IIA 8,487 KJ/kWh – Energy Block IIB
OUT PUT CAPACITY:	334.0 MW (net at Site reference conditions) – Energy Block I 289.0 MW (net at Site reference conditions) – Energy Block IIA 236.0 MW (net at Site reference conditions) – Energy Block IIB
CALORIFIC VALUE:	35,022.0 KJ/litre
LHV-HHV FACTOR	1.06

9.2.2 **Indexation & Escalation**

The Fuel Cost Component shall be adjusted on account of:

(i) Fuel price variation during the New PPA Term; and

(ii) the actual transportation charges, if applicable.

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9.2.3 **Indexation Formula**

The Fuel Cost Component shall be indexed based on the following formula:

$FCC_{Gas/RLNG\ (Rev)}$	=	$FCC_{Gas/RLNG\ (Ref)} * P_{Gas/RLNG\ (Rev)} / P_{Gas/RLNG\ (Ref)}$
Where:		
$FCC_{Gas/RLNG\ (Rev)}$	=	The revised Fuel Cost Component on Gas/RLNG
$FCC_{Gas/RLNG\ (Ref)}$	=	The reference Fuel Cost Component on Gas/RLNG
$P_{Gas/RLNG\ (Rev)}$	=	The revised delivered HHV Gas/RLNG price notified by the relevant authority
$P_{Gas/RLNG\ (Ref)}$	=	The reference Gas/RLNG price of USD 12.7148 / MMBtu
$FCC_{LSFO\ (Rev)}$	=	$FCC_{LSFO\ (Ref)} * P_{LSFO\ (Rev)} / P_{LSFO\ (Ref)}$
Where:		
$FCC_{LSFO\ (Rev)}$	=	The revised Fuel Cost Component on LSFO
$FCC_{LSFO\ (Ref)}$	=	The reference Fuel Cost Component on LSFO
$P_{LSFO\ (Rev)}$	=	The revised HHV LSFO price (including transportation charges) notified by the relevant authority
$P_{LSFO\ (Ref)}$	=	The reference LSFO price of PKR 111,047.93 / ton (including transportation charges)
$FCC_{HSD\ (Rev)}$	=	$FCC_{HSD\ (Ref)} * P_{HSD\ (Rev)} / P_{HSD\ (Ref)}$
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 delivered HHV HSD price (including transportation charges) notified by the relevant authority
$P_{HSD\ (Ref)}$	=	The reference delivered HSD price of PKR 280.75 / litre (including transportation charges)

9.3 LOCAL VARIABLE O&M COST COMPONENT

9.3.1 **Assumptions**

This component represents the variable (local) cost of material and labor required for plant maintenance, GT overhauls and major repairs and renewals. The projected Local Variable O&M costs being claimed by the Petitioner are shown below and have been estimated keeping in view the anticipated recurring and major repairs and overhauls during the extended term to ensure smooth and reliable plant operations.

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Description	Requested (PKR million)		
	Energy Block I	Energy Block IIA	Energy Block IIB
Fuel additives, chemicals etc.	76.9	102.7	56.7
Plant maintenance	28.6	39.1	24.7
Gas turbines overhauls	27.2	40.3	8.6
Major repairs and renewals	72.1	41.9	77.8
Total	**204.8**	**224.0**	**167.8**

9.3.2 **Indexation and Escalation**

The Local Variable O&M Cost Component of the Energy Purchase Price shall be quarterly indexed to the National CPI, as notified by the Pakistan Bureau of Statistics.

9.3.3 **Indexation Formula**

The Local Variable O&M Cost Component shall be indexed based on the following formula:

$LVO\&M_{(LRev)}$	=	**$LVO\&M_{(LRef)} * CPI_{(REV)} / CPI_{(REF)}$**
Where:		
$LVO\&M_{(LRev)}$	=	The revised Local Variable O&M Component of Tariff
$LVO\&M_{(LRef)}$	=	The reference Local Variable O&M Component of Tariff
$CPI_{(REV)}$	=	The revised National CPI
$CPI_{(REF)}$	=	The reference National CPI

9.4 FOREIGN VARIABLE O&M COST COMPONENT

9.4.1 **Assumptions**

This component represents the variable (foreign) cost of material and labor required for plant maintenance, GT overhauls and major repairs and renewals. The projected Foreign Variable O&M costs being claimed by the Petitioner are shown below and have been estimated keeping in view the anticipated recurring and major repairs and overhauls during the extended term to ensure smooth and reliable plant operations. Further, these costs include impact of duties and taxes applicable on the import of spares.

Description	Requested (PKR million)		
	Energy Block I	Energy Block IIA	Energy Block IIB
Fuel additives, chemicals etc.	275.9	248.3	284.7
Plant maintenance	75.6	79.0	55.7
Gas turbines overhauls	324.8	243.0	105.9
Major repairs and renewals	560.2	241.8	93.6
Total	1,236.5	812.1	539.9

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9.4.2 **Indexation and Escalation**

The Foreign Variable O&M Cost Component of the Energy Charge shall be quarterly indexed to the US CPI and PKR/USD exchange rate variations.

9.4.3 **Indexation Formula**

The Foreign Variable O&M Cost Component shall be indexed based on the following formula:

$FVO\&M_{(LRev)}$	=	**$FVO\&M_{(LRef)}$ * US $CPI_{(REV)}$ / US $CPI_{(REF)}$ * $ER_{(REV)}$ / $ER_{(REF)}$**
Where:		
$FVO\&M_{(LRev)}$	=	The revised Foreign Variable O&M Component of Tariff
$FVO\&M_{(LRef)}$	=	The reference Foreign Variable O&M Component of Tariff
US $CPI_{(REV)}$	=	The revised US CPI (All Urban Consumers)
US $CPI_{(REF)}$	=	The reference US CPI (All Urban Consumers)
$ER_{(REV)}$	=	The revised TT & OD selling rate of US dollar
$ER_{(REF)}$	=	The reference TT & OD selling rate of PKR 265.95

KOT ADDU POWER COMPANY LIMITED

SECTION 10
CAPACITY PURCHASE PRICE – PLANT 2

10. CAPACITY PURCHASE PRICE - PLANT 2

10.1 SUMMARY

10.1.1 The Capacity Purchase Price component of the Reference Generation Tariff is payable on take and pay basis at an assumed load factor of 30%. The Capacity Purchase Price component of the Reference Generation Tariff comprises of the following components:

(a) the fixed operations and maintenance cost (the **Fixed O&M Cost Component**);

(b) the cost of working capital (the **Cost of Working Capital Component**); and

(c) the return on equity (the **ROE**).

10.1.2 A summary of the Capacity Purchase Price component of the proposed Reference Generation Tariff is provided in the table below:

Gas / RLNG:

Capacity Purchase Price (PKR/kW/Hour) @ 30% load factor				
Year	**Fixed O&M local**	**Cost of W/C**	**ROE**	**Total CPP**
1	0.4353	1.2382	3.0495	4.7230
2	0.4353	1.2382	3.0495	4.7230
3	0.4353	1.2382	3.0495	4.7230
4	0.4353	1.2382	3.0495	4.7230
5	0.4353	1.2382	3.0495	4.7230

LSFO:

Capacity Purchase Price (PKR/kW/Hour) @ 30% load factor				
Year	**Fixed O&M local**	**Cost of W/C**	**ROE**	**Total CPP**
1	0.4508	1.0645	3.1582	4.6735
2	0.4508	1.0645	3.1582	4.6735
3	0.4508	1.0645	3.1582	4.6735
4	0.4508	1.0645	3.1582	4.6735
5	0.4508	1.0645	3.1582	4.6735

HSD:

Capacity Purchase Price (PKR/kW/Hour) @ 30% load factor				
Year	**Fixed O&M local**	**Cost of W/C**	**ROE**	**Total CPP**
1	0.4508	1.2216	3.1582	4.8306
2	0.4508	1.2216	3.1582	4.8306
3	0.4508	1.2216	3.1582	4.8306
4	0.4508	1.2216	3.1582	4.8306
5	0.4508	1.2216	3.1582	4.8306

KOT ADDU POWER COMPANY LIMITED

10.2 LOCAL FIXED O&M COST COMPONENT

10.2.1 Assumptions

Since the operations of the Plant 2 are also being managed centrally through an in-house team of the Petitioner, given the size, complexity, ageing and diversity of technology across the Energy Blocks, it is imperative for the Petitioner to retain its existing operating model for reliable operations during extended tariff control period. Accordingly, some of the fixed costs of the Facility have been allocated to Plant 2 after taking into consideration the capacity and historical utilization profile.

The projected Fixed O&M costs being claimed by the Petitioner, along with the underlying basis are as follows:

Total Fixed Cost	FY22 (PKR million)	Requested (PKR million)	Basis
Salaries, wages, and benefits	380.9	303.5	As per actual
Health and medication	26.2	28.4	
3rd party contract services	27.7	27.6	
Standby auxiliary consumption	43.4	88.0	As per prevalent tariff and expected consumption
Site infrastructure maintenance & running	28.0	24.7	As per actual, subject to recent inflationary trend adjustment
Other expenses	98.3	93.0	As per actual, subject to inflationary trend
Total	**604.4**	**565.2**	

As can be seen from the table presented above, requested FOM cost is primarily local in nature, not requiring any exchange rate adjustments and is fairly aligned with the actual historical cost for FY 2022.

10.2.2 Indexation & Escalation

The following indexation shall be applicable to the Local Fixed O&M Cost Component:

(a) The Local Fixed O&M Cost Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

10.2.3 Indexation Formula

The Local Fixed O&M Cost Component shall be quarterly indexed based on the following formula:

$LFO\&M_{(LRev)}$	=	**$LFO\&M_{(LRef)} * CPI_{(REV)} / CPI_{(REF)}$**
Where:		
$LFO\&M_{(LRev)}$	=	The revised Local Fixed O&M Component of Tariff
$LFO\&M_{(LRef)}$	=	The reference Local Fixed O&M Component of Tariff
$CPI_{(REV)}$	=	The revised National CPI
$CPI_{(REF)}$	=	The reference National CPI

KOT ADDU POWER COMPANY LIMITED

10.3 COST OF WORKING CAPITAL COMPONENT

10.3.1 Assumptions

The Petitioner has estimated its working capital requirement based on 25 days fuel payment (Gas (RLNG), LSFO or HSD, as applicable) receivable from the Power Purchaser (inclusive of GST), computed at 30% load factor. Additionally, LSFO inventory equivalent to 15 days of generation and HSD inventory equivalent to 5 days of generation at 60% load factor has been assumed. Cost of short-term borrowing has been assumed at 3-month KIBOR + 2%. Further, cost of 30 days SBLC, both for Gas, LSFO and HSD (at the rate of 1.5% per annum) has been assumed as part of the working capital cost.

Final terms to be agreed with the fuel suppliers are requested to be allowed as one-time adjustment to the Petitioner.

10.3.2 Indexation & Escalation

The Cost of Working Capital Component of the Capacity Purchase Price shall be quarterly indexed to both:

(i) the Fuel price variation, as notified by the relevant authority / entity; and

(ii) the quarterly changes in the 3-month KIBOR.

10.4 THE ROE

10.4.1 Assumptions

The Petitioner was privatized with WAPDA divesting 36% of its shareholding in the Petitioner. The Petitioner had an issued and paid-up capital of PKR 8.8 billion comprising 880.25 million shares of PKR 10 each. Since then, there has been no change in the issued and paid-up capital of the Petitioner. According to the Audited Financial Statements for FY22 (attached as per **Annexure V**), total shareholders' equity as of June 30, 2022, is PKR 68,595.91 million. However, the Petitioner has calculated requested ROE component using equity value of PKR 23,288.1 million allocated to Plant 2, on the following basis:

Description	Unit	Amount
Issued share capital in 1996	PKR million	8,802.5
Equivalent investment @ 34.25 PKR to USD	USD million	257.0
Investment allocated to Plant 2 based on capacity	USD million	87.3
Converted equity investment for Plant 2	PKR million	23,288.1
Return on Equity ("ROE") @ 17.0% p.a.	PKR million	3,959.0
ROE component – at Gas / RLNG	PKR / kWh	3.0495
ROE component – at LSFO	PKR / kWh	3.1582
ROE component – at HSD	PKR / kWh	3.1582

As part of privatization process, 36% shareholding of the Petitioner was divested at a value of USD 291 million, thus translating into total equity valuation of over USD 800 million, which is significantly higher than the equity investment value assumed for the purpose of ROE component computation.

The ROE of 17.0% is being requested based on following factors:

- Higher prevailing KIBOR rates (e.g., 3m KIBOR has reached at 20.83% on 06 March 2023), which effectively translates into cost of debt over 22.8%;

- Annual CPI of 21.32% for FY22 published by Pakistan Bureau of Statistics, with an increasing trend in recent months, the highest being in February 2023 i.e. 31.5%;
- Applicability of higher dividend tax (at the rate of 15%) on shareholders of the Petitioner without any pass-through coverage in the tariff;
- Higher opportunity cost due to increased country risk premium; and
- The Petitioner (including the Project sponsors) will be bearing additional risks and exposure during the New PPA Term due to possible unavailability of the risk coverage previously provided by the Facilitation Agreement and the GOP Guarantee, which risk coverage may now be provided in the form of SBLC.

Further, needless to say, while the Authority also allows RoEDC to new projects, is a component that is not requested by the Petitioner since its Project is already on ground - developed, constructed, established and implemented.

10.4.2 **CLAW-BACK MECHANISM**

In line with recent precedents, the Petitioner offers incorporation of a claw-back mechanism for ROE in case the regulated return increases over 17% due to saving in other tariff components, if any, against the reference equity of PKR 10,629.02 million as per the following table:

Percentage of ROE	**Sharing**	
	Petitioner	**Power Purchaser**
Up to 17% of reference equity	100%	NIL
>17% but ≤ 20% of reference equity	50%	50%
>20% of reference equity	25%	75%

10.4.3 **Indexation and Escalation**

The ROE Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

10.4.4 **Indexation Formula**

The ROE Component shall be indexed using the following formula:

ROE $_{(Rev)}$	=	**ROE** $_{(Ref)}$ * **CPI** $_{(REV)}$ / **CPI** $_{(REF)}$
Where:		
ROE $_{(Rev)}$	=	The revised ROE Component of Tariff
ROE $_{(Ref)}$	=	The reference ROE Component of Tariff
CPI $_{(REV)}$	=	The revised National CPI
CPI $_{(REF)}$	=	The reference National CPI

KOT ADDU POWER COMPANY LIMITED

SECTION 11
ENERGY PURCHASE PRICE – PLANT 2

11. ENERGY PURCHASE PRICE - PLANT 2

11.1 SUMMARY

11.1.1 The Energy Purchase Price component of the Reference Generation Tariff of Plant 2 is based on the actual kWh off-take, and consists of:

(i) the fuel component (the "**Fuel Cost Component**"); and

(ii) the variable O&M component (the "**Variable O&M Cost Component**").

11.1.2 A summary of the Energy Purchase Price is provided in the following table:

Gas/RLNG:

Energy Block IIC				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	29.6334	0.1270	0.5561	30.3165
2	29.6334	0.1270	0.5561	30.3165
3	29.6334	0.1270	0.5561	30.3165
4	29.6334	0.1270	0.5561	30.3165
5	29.6334	0.1270	0.5561	30.3165
Energy Block III				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	31.7596	0.1608	0.1686	32.0890
2	31.7596	0.1608	0.1686	32.0890
3	31.7596	0.1608	0.1686	32.0890
4	31.7596	0.1608	0.1686	32.0890
5	31.7596	0.1608	0.1686	32.0890

LSFO

Energy Block IIC				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	23.3867	0.2745	1.2017	24.8629
2	23.3867	0.2745	1.2017	24.8629
3	23.3867	0.2745	1.2017	24.8629
4	23.3867	0.2745	1.2017	24.8629
5	23.3867	0.2745	1.2017	24.8629

HSD:

Energy Block IIC				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	68.0322	0.1521	0.6657	68.8500
2	68.0322	0.1521	0.6657	68.8500
3	68.0322	0.1521	0.6657	68.8500
4	68.0322	0.1521	0.6657	68.8500
5	68.0322	0.1521	0.6657	68.8500
Energy Block III				
Energy Purchase Price (PKR/kWh)				
Year	**Fuel Cost Component**	**Variable O&M (Local)**	**Variable O&M (Foreign)**	**Total EPP**
1	71.9708	0.2524	0.2646	72.4878
2	71.9708	0.2524	0.2646	72.4878
3	71.9708	0.2524	0.2646	72.4878
4	71.9708	0.2524	0.2646	72.4878
5	71.9708	0.2524	0.2646	72.4878

11.1.3 It is noted that after factoring the impact of fuel cleaning, average plant aging and variation in plant load factor, following net block wise efficiencies (LHV) at reference site conditions, and at 30% load factor are guaranteed:

	Gas/RLNG	**LSFO**	**HSD**
Energy Block IIC	43.17%	42.42%	42.42%
Energy Block III	40.28%	N/A	40.10%

11.2 FUEL COST COMPONENT

11.2.1 Assumptions

It is submitted that there will be separate fuel cost component for each fuel type and the energy invoice will be based on the applicable fuel and generation scenario.

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The main assumptions used to derive at the Fuel Cost Component are provided below:

Gas/RLNG:

GAS PRICE:	USD 12.7148 per MMBtu (HHV), subject to adjustment as per actual). General Sales Tax ("**GST**") is not included in the Gas price and shall be a pass-through to the Power Purchaser at actual
HEAT RATE:	8,339 KJ/kWh (Average of last 5 years) – Energy Block IIC 8,937 KJ/kWh (Average of last 5 years) – Energy Block III
OUT PUT CAPACITY:	236.0 MW (net at Site reference conditions) – Energy Block IIC 258.0 MW (net at Site reference conditions) – Energy Block III
LHV-HHV FACTOR	1.108732
GST ON FUEL	The actual GST charged on the Fuel Cost Component of Tariff is to be claimed at actuals from the Power Purchaser through monthly supplemental invoice.

LSFO:

LSFO PRICE:	PKR 111,047.93 per ton (including transportation cost, subject to adjustments as per actuals). General Sales Tax ("**GST**") is not included in the LSFO price and shall be a pass-through to the Power Purchaser at actual
HEAT RATE:	8,487 KJ/kWh (Average of last 5 years) – Energy Block IIC
OUT PUT CAPACITY:	228.0 MW (net at Site reference conditions) – Energy Block IIC
CALORIFIC VALUE:	40,297.0 KJ/Kg
LHV-HHV FACTOR	1.06

HSD:

HSD PRICE:	PKR 280.8 per litre (including transportation cost, subject to adjustments as per actuals). General Sales Tax ("**GST**") is not included in the Gas price and shall be a pass-through to the Power Purchaser at actual
HEAT RATE:	8,487 KJ/kWh (Average of last 5 years) – Energy Block IIC 8,978 KJ/kWh (Average of last 5 years) – Energy Block III
OUT PUT CAPACITY:	228.0 MW (net at Site reference conditions) – Energy Block IIC 249.0 MW (net at Site reference conditions) – Energy Block III
CALORIFIC VALUE:	35,022.0 KJ/litre
LHV-HHV FACTOR	1.06

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11.2.2 **Indexation & Escalation**

The Fuel Cost Component shall be adjusted on account of:

(i) Fuel price variation during the New PPA Term; and

(ii) The actual transportation charges.

11.2.3 **Indexation Formula**

The Fuel Cost Component shall be indexed based on the following formula:

$FCC_{Gas/RLNG\ (Rev)}$	=	$FCC_{Gas/RLNG\ (Ref)} * P_{Gas/RLNG\ (Rev)} / P_{Gas/RLNG\ (Ref)}$
Where:		
$FCC_{Gas/RLNG\ (Rev)}$	=	The revised Fuel Cost Component on Gas/RLNG
$FCC_{Gas/RLNG\ (Ref)}$	=	The reference Fuel Cost Component on Gas/RLNG
$P_{Gas/RLNG\ (Rev)}$	=	The revised delivered HHV Gas/RLNG price notified by the relevant authority
$P_{Gas/RLNG\ (Ref)}$	=	The reference Gas/RLNG price of USD 12.7148 / MMBtu
$FCC_{LSFO\ (Rev)}$	=	$FCC_{LSFO\ (Ref)} * P_{LSFO\ (Rev)} / P_{LSFO\ (Ref)}$
Where:		
$FCC_{LSFO\ (Rev)}$	=	The revised Fuel Cost Component on LSFO
$FCC_{LSFO\ (Ref)}$	=	The reference Fuel Cost Component on LSFO
$P_{LSFO\ (Rev)}$	=	The revised HHV LSFO price (including transportation charges) notified by the relevant authority
$P_{LSFO\ (Ref)}$	=	The reference LSFO price of PKR 111,047.93 / ton (including transportation charges)
$FCC_{HSD\ (Rev)}$	=	$FCC_{HSD\ (Ref)} * P_{HSD\ (Rev)} / P_{HSD\ (Ref)}$
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 delivered HHV HSD price (including transportation charges) notified by the relevant authority
$P_{HSD\ (Ref)}$	=	The reference delivered HSD price of PKR 280.75 / litre (including transportation charges)

11.3 LOCAL VARIABLE O&M COST COMPONENT

11.3.1 Assumptions

This component represents the variable (local) cost of material and labor required for plant maintenance, GT overhauls and major repairs and renewals. The projected Local Variable O&M costs being claimed by the Petitioner are shown below and have been estimated keeping in view the anticipated recurring and major repairs and overhauls during the extended term to ensure smooth and reliable plant operations.

Description	Requested (PKR million)	
	Energy Block IIC	Energy Block III
Fuel additives, chemicals etc.	56.7	25
Plant maintenance	21.7	1.4
Gas turbines overhauls	8.6	0.6
Major repairs and renewals	77.5	91.2
Total	164.5	118.1

11.3.2 Indexation and Escalation

The Local Variable O&M Cost Component of the Energy Purchase Price shall be quarterly indexed to the National CPI, as notified by the Pakistan Bureau of Statistics.

11.3.3 Indexation Formula

The Local Variable O&M Cost Component shall be indexed based on the following formula:

$LVO\&M_{(LRev)}$	=	$LVO\&M_{(LRef)} * CPI_{(REV)} / CPI_{(REF)}$
Where:		
$LVO\&M_{(LRev)}$	=	The revised Local Variable O&M Component of Tariff
$LVO\&M_{(LRef)}$	=	The reference Local Variable O&M Component of Tariff
$CPI_{(REV)}$	=	The revised National CPI
$CPI_{(REF)}$	=	The reference National CPI

11.4 FOREIGN VARIABLE O&M COST COMPONENT

11.4.1 Assumptions

This component represents the variable (foreign) cost of material and labor required for plant maintenance, GT overhauls and major repairs and renewals. The projected Foreign Variable O&M costs being claimed by the Petitioner are shown below and have been estimated keeping in view the anticipated recurring and major repairs and overhauls during the extended term to ensure smooth and reliable plant operations. Further, these costs include impact of duties and taxes applicable on the import of spares.

Description	Requested (PKR million)	
	Energy Block IIC	Energy Block III
Fuel additives, chemicals etc.	284.7	-
Plant maintenance	55.7	0.2
Gas turbines overhauls	105.9	6.1
Major repairs and renewals	273.7	117.6
Total	720.0	123.9

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11.4.2 **Indexation and Escalation**

The Foreign Variable O&M Cost Component of the Energy Purchase Price shall be quarterly indexed to the US CPI and PKR/USD exchange rate variations.

11.4.3 **Indexation Formula**

The Foreign Variable O&M Cost Component shall be indexed based on the following formula:

FVO&M $_{(LRev)}$	=	**FVO&M $_{(LRef)}$ * US CPI $_{(REV)}$ / US CPI $_{(REF)}$ * ER $_{(REV)}$ / ER $_{(REF)}$**
Where:		
FVO&M $_{(LRev)}$	=	The revised Foreign Variable O&M Component of Tariff
FVO&M $_{(LRef)}$	=	The reference Foreign Variable O&M Component of Tariff
US CPI $_{(REV)}$	=	The revised US CPI (all urban consumers)
US CPI $_{(REF)}$	=	The reference US CPI (all urban consumers)
ER $_{(REV)}$	=	The revised TT & OD selling rate of US dollar
ER $_{(REF)}$	=	The reference TT & OD selling rate of PKR 265.95

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SECTION 12
SWITCHYARD FACILITY CHARGES

12. SWITCHYARD FACILITY CHARGES

12.1 SUMMARY

12.1.1 The Switchyard Facility Charges are based on the Fixed O&M component, Return on Equity and losses of auto transformers. These charges have been calculated on the basis of 400 MVA autotransformers capacity with 95% availability and 0.9 power factor. The Switchyard Facility is kept operational irrespective of the generation level from Plant 1 and Plant 2 and consists of:

(i) energy transformation charges ("**Energy Transformation Charges**" or "**ETC**");

(ii) fixed O&M Component (the "**Fixed O&M Component**"); and

(iii) Return on equity (the "**ROE**").

12.1.2 A summary of the **Switchyard Facility Charges** is provided in the following table:

	Variable Charges	Fixed Charges & ROE			
Year	Energy Transformation Charges (PKR / kWh)	Fixed O&M Local (PKR / kW/ Month)	Fixed O&M Foreign (PKR / kW/ Month)	ROE (PKR / kW/ Month)	Total (PKR / kW/ Month)
1	0.0512	36.7101	47.6230	134.9250	219.2581
2	0.0512	36.7101	47.6230	134.9250	219.2581
3	0.0512	36.7101	47.6230	134.9250	219.2581
4	0.0512	36.7101	47.6230	134.9250	219.2581
5	0.0512	36.7101	47.6230	134.9250	219.2581

12.2 ENERGY TRANSFORMATION CHARGES

12.2.1 **Assumptions**

The Petitioner has installed autotransformer, T-1&T-2 (2*100 MVA), T-5 (100 MVA) & T-6 (200) MVA. These autotransformers remain energized for the interconnection between 220 kV and 132 kV System. Petitioner has calculated on load losses of these transformer based on OEM data sheet with average utilization @ 70%.

12.2.2 **Indexation and Escalation**

Energy Transformation Charges have been calculated using electricity unit rate (Unit Rate) of import bill for the month of January 2023, while keeping in view the reference utilisation of autotransformers of 70% and has to be index as per below formula:

12.2.3 **Indexation Formula**

The ETC Component shall be indexed using the following formula:

ETC $_{(REV)}$	=	**ETC** $_{(REF)}$ *** Unit rate** $_{(REV)}$ **/ Unit rate** $_{(REF)}$ *** Actual Utilisation** $_{(REV)}$ **/ Reference Utilisation** $_{(REF)}$
Where:		
ETC $_{(REV)}$	=	The revised ETC Component of Tariff
ETC $_{(REF)}$	=	The reference ETC Component of Tariff
Unit Rate $_{(REV)}$	=	The revised Unit Rate of Electricity applicable as per notification by NEPRA
Unit Rate $_{(REF)}$	=	The reference Unit Rate of Electricity 34.58 Rs/ Unit as per NEPRA Notification applicable for the Month of January,2023
Utilisation $_{(REF)}$	=	Reference Utilisation of Autotransformers (70%)
Utilisation $_{(REV)}$	=	Actual Utilisation of Autotransformers (%)

12.3 LOCAL FIXED O&M COST COMPONENT

12.3.1 **Assumptions**

The Fixed O&M component of the Switchyard Facility Charges represent the fixed cost of qualified staff for operations and maintenance, security staff, repair and maintenance, fee by Electrical inspector of Punjab Govt etc. Petitioner has 220 kV & 132 kV high voltage switchyards being operated from 3 central control rooms. The Petitioner has requested the Switchyard Facility Charges to ensure the reliability, stability and integrity of grid system to provide uninterrupted power to national grid.

Since the operations of the Switchyard Facility are also being managed centrally through an in-house team of the Petitioner, given the size, complexity, ageing and diversity of technology, it is imperative for the Petitioner to retain its existing operating model for reliable operations during extended tariff control period. Accordingly, some of the fixed costs of the Facility have been allocated to Switchyard after taking into consideration the historical utilization profile.

The projected Fixed O&M costs being claimed by the Petitioner, along with the underlying basis are as follows:

Total Fixed Cost	**FY22 (PKR million)**	**Requested (PKR million)**	**Basis**
Salaries, wages, and benefits	94.5	93.4	As per actual
Third Party Contract Services	4.9	5.9	As per actual
Security & Health	10.1	12.2	As per actual
Auxiliary costs	1.1	3.0	As per actual
Plant maintenance	3.9	11.3	Specific activities
Others	22.9	24.9	Allocation of common fixed costs
Total	**137.4**	**150.7**	

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12.3.2 **Indexation & Escalation**

The following indexation shall be applicable to the Local Fixed O&M Cost Component:

(a) The Local Fixed O&M Cost Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

12.3.3 **Indexation Formula**

The Local Fixed O&M Cost Component shall be quarterly indexed based on the following formula:

LFO&M $_{(LRev)}$	=	**LFO&M** $_{(LRef)}$ * **CPI** $_{(REV)}$ / **CPI** $_{(REF)}$
Where:		
LFO&M $_{(LRev)}$	=	The revised Local Fixed O&M Component of Tariff
LFO&M $_{(LRef)}$	=	The reference Local Fixed O&M Component of Tariff
CPI $_{(REV)}$	=	The revised National CPI
CPI $_{(REF)}$	=	The reference National CPI

12.4 FOREIGN FIXED O&M COST COMPONENT

12.4.1 ASSUMPTIONS

The Foreign Fixed O&M Component of the Switchyard Facility Charges represent the cost of replacement of old auto transformer T-1&T-2, 220 kV Bus Bar Differential Protection Panels, Distance Protection Panels, CTs, PTs etc. The projected Fixed O&M Costs being claimed by the Petitioner, along with the underlying basis are as follows:

Total Fixed Cost	FY22 (PKR million)	Requested (PKR million)	Basis
Plant maintenance	5.1	13.3	As per actual
Major repairs and renewals	59.1	182.2	
Total	**64.2**	**195.4**	

12.4.2 **Indexation & Escalation**

The following indexation shall be applicable to the Fixed O&M Cost Component:

(a) The Foreign Fixed O&M Cost Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

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12.4.3 **Indexation Formula**

The Foreign Fixed O&M Cost Component shall be quarterly indexed based on the following formula:

FFO&M $_{(F.Rev)}$	=	**FFO&M** $_{(F.Ref)}$ * **CPI** $_{(REV)}$ / **CPI** $_{(REF)}$ * **USD** $_{(REV)}$ / **USD** $_{(REF)}$
Where:		
FFO&M $_{(F.Rev)}$	=	The revised Foreign Fixed O&M Component of Tariff
FFO&M $_{(F.Ref)}$	=	The reference Foreign Fixed O&M Component of Tariff
USD $_{(REV)}$	=	The revised USD
USD $_{(REF)}$	=	The reference USD
CPI $_{(REV)}$	=	The revised US CPI
CPI $_{(REF)}$	=	The reference US CPI

12.5 THE ROE

12.5.1 **Assumptions**

The Petitioner was privatized with WAPDA divesting 36% of its shareholding in the Petitioner. The Petitioner had an issued and paid-up capital of PKR 8.8 billion comprising 880.25 million shares of PKR 10 each. Since then, there has been no change in the issued and paid-up capital of the Petitioner. According to the Audited Financial Statements for FY22 (attached as per **Annexure V**), total shareholders' equity as of June 30, 2022, is PKR 68,595.91 million. However, the Petitioner has calculated requested ROE component using equity value of PKR 3257.2 million allocated to Switch yard on the following basis: ROE Component has been calculated with 400 MVA capacity @ 0.9 power factor:

Description	Unit	Amount
Issued share capital in 1996	PKR million	8,802.5
Equivalent investment @ 34.25 PKR to USD	USD million	257.0
Investment allocated to Switch Yard @ 4.75 % of total investment	USD million	12.2
Converted equity investment for Switch yard	PKR million	3257.2
Return on Equity ("ROE") @ 17.0% p.a.	PKR million	553.7

12.5.2 **Indexation and Escalation**

The ROE Component shall be quarterly indexed to the National CPI of Pakistan, as notified by the Pakistan Bureau of Statistics.

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12.5.3 **Indexation Formula**

The ROE Component shall be indexed using the following formula:

ROE $_{(Rev)}$	=	**ROE $_{(Ref)}$ * CPI $_{(REV)}$ / CPI $_{(REF)}$**
Where:		
ROE $_{(Rev)}$	=	The revised ROE Component of Tariff
ROE $_{(Ref)}$	=	The reference ROE Component of Tariff
CPI $_{(REV)}$	=	The revised National CPI
CPI $_{(REF)}$	=	The reference National CPI

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SECTION 13
CRITICAL ADJUSTMENTS
&
PASS-THROUGH ITEMS

13. CRITICAL ADJUSTMENTS & PASS-THROUGH ITEMS

13.1 ADJUSTMENTS & PASS-THROUGH ITEMS

13.1.1 The following adjustments and pass-through items shall form an integral part of the basis on which the Reference Generation Tariff has been prepared:

(a) The Reference Generation Tariff Table attached as **Annexure U** (as shall be reworked at the New PPA Commencement Date) to adjust the factors used in the Reference Generation Tariff to those prevailing on the New PPA Commencement Date.

(b) Cost of any delay in payments by the Power Purchaser beyond its due date which has not been factored in the calculation of Reference Generation Tariff and shall be allowed or accounted for as an additional payment in accordance with the agreed provisions pertaining to the cost of delay in payments covered in the New PPA, as customary in such agreements.

(c) In addition to the pass-through items stipulated in similar precedent power purchase agreements for thermal projects selling electric power to the national grid and in the Petition herein, any taxes (including but not limited to corporate taxes, minimum turnover tax, alternate corporate tax etc.) duties and levies, WWF, WPPF, all risk insurance during operations, water use charges, if applicable, and/or governmental impositions of whatsoever nature; and financing cost of SBLC's or any other instruments required under the FSA / OSA, not factored in the Reference Generation Tariff calculation will be treated as part of the Project / operating cost as per actual basis and will be passed through to the Power Purchaser.

(d) The Petitioner paid USD 5.7 million against insurance cost during FY22, whereas an estimate of USD 6.0 million was provided by Marsh (Insurance Advisor) for FY23 and was communicated to the Power Purchaser as well. Insurance cost until October 2022 stands paid by the Petitioner. Accordingly, considering the ever-increasing insurance costs around due to uncertainties associated with global economic outlook, increased country risk, technical specification of the Facility and inflationary trends, the Authority is hereby requested to allow insurance costs in USD as pass through, as per actual (subject to applicable US CPI and PKR to USD exchange rate indexation).

(e) Further, the Petitioner requests to allow reimbursement of pass-through items within a month of the actual payment / invoice date.

(f) **Actual Heat rate determination/ adjustments:**

To be fair and transparent, Petitioner request to review and determine the actual heat rates of the generation facility for the purpose of new PPA. In the past, the Petitioner has faced significant loss due to under recovery of fuel cost. Accordingly, in order to financially sustain under the extended term, it is critical for the Petitioner to have a tariff determination based on actualized heat rate as per third party heat rate tests on annual basis, whereby, first such test to be carried out within 3 months of commencement New PPA.

The actual heat rate loss only for the last 5 years ran into billions of PKR.

(g) **Other adjustments and incentives:**

In addition to the recurring adjustments stipulated in similar precedent power purchase agreements for thermal projects selling electric power to the national grid, the Petitioner is requesting adjustments for:

i. Costs incurred in respect of startups under the New PPA.

ii. Heat rate degradation based on heat rate testing under Section 7.6.7.

iii. Ambient site conditions.

iv. Part load adjustment (as specified in **Annexure T).**

v. Heat rate adjustment of 3% relating to operations under the half module (1 GT + half ST).

vi. Credit period / SBLC arrangement agreed with the fuel suppliers under the respective fuel supply agreements.

(h) Any benefit/concession/incentives given to any other IPP/projects or given under the Original PPA will also be given to the Petitioner.

13.2 FORCE MAJEURE EVENTS

13.2.1 It is submitted that in case of force majeure events that are triggered by a "*Change in Law Event*" or "*Pakistan Political Event*" (*as defined in the standard Facilitation Agreement*) (the **"Specific FMEs"**) where such events:

(a) lead to suspension of operations or inability to make partial/complete capacity available, then the capacity payments for the unavailable capacity is allowed as a pass-through item till the time normal operations of the Facility resume.

(b) lead to restoration to be undertaken, then the Authority is required to determine a supplemental tariff in relation to cost of restoration or cost of additional consumables, which, in each case, is then allowed as a pass-through.

13.2.2 The Petitioner requests the Authority that the afore-stated submissions are allowed to the Project during the New PPA Term since:

(a) neither the Power Purchaser, nor the Petitioner have any control over such Specific FMEs; and

(b) projects on the national grid are allowed these pass-through payments.

13.2.3 It is further submitted that if the Petitioner is able to recover from such Specific FMEs (including its related consequences) and is able to resume its power supply, then the consumers are the real beneficiary since no new asset is required to be constructed and the power can be restored as soon as the Facility is capable of resuming operations.

13.3 EFFECTS RESULTING FROM THE NEW POWER PURCHASE AGREEMENT

13.3.1 As noted in Section 3.1.3 above, the terms and conditions of the New PPA are to be finalized between the Parties after approval of the Reference Generation Tariff and Switchyard Facility Charges by the Authority in terms of this Tariff Petition – as a result of the risk allocation contained therein or from additional cost contemplated for the New PPA, may have an effect on the proposed Reference Generation Tariff and Switchyard Facility Charges. Therefore, it is submitted before the Authority that any cost or risks emanating from such New PPA not already factored in the Reference Generation Tariff and Switchyard Facility Charges calculation will be, fundamentally, assumed to be a pass-through item or otherwise shall result in a supplemental tariff for the Petitioner.

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SECTION 14
GENERAL ASSUMPTIONS

14. GENERAL ASSUMPTIONS

14.1 FOREWORD

14.1.1 The Reference Generation Tariff and Switchyard Facility Charges have been prepared on the following assumptions. Any changes to these assumptions will result in changes in the Reference Generation Tariff or the Switchyard Facility Charges.

14.2 ASSUMPTIONS IN RELATION TO REFERENCE GENERATION TARIFF

14.2.1 No corporate income tax and no minimum turnover tax has been considered for the preparation of Reference Generation Tariff.

14.2.2 The reference US CPI is 137.20 as appearing in the US Bureau of Labor Statistics publication for the month of January 2023.

14.2.3 The reference National CPI for all local tariff components is 202.53 as published by Pakistan Bureau of Statistics, Pakistan in their publication for the month of January 2023.

14.2.4 The New PPA Term is proposed to be 5 years, commencing from date of grant of the final decision of this Tariff Petition by the honorable Authority. Each agreement year is subject to extension on account of Force Majeure similar to the precedent power purchase agreements for thermal projects selling electric power to the national grid and as mutually agreed between the Petitioner and the purchaser.

14.2.5 Any GST that may be levied on any of the components of the Reference Generation Tariff shall be reimbursed by the Power Purchaser at the time of settlement of respective invoice on the due date.

14.2.6 Any change in taxes/duties shall be adjusted as per actuals and will be pass-through to be paid by the Power Purchaser.

14.2.7 The prevailing statutory obligation to pay WPPF and WWF by the Petitioner shall continue to be treated as a pass-through and are to be claimed at actuals.

14.2.8 A constant PKR based ROE is assumed at 17% over the period of New PPA Term, subject to quarterly indexation with National CPI.

14.2.9 The Reference Generation Tariff is calculated based on a 30% plant load factor.

14.2.10 The price of LSFO is assumed to be PKR 111,047.93/ton (without GST), which includes the transportation cost of fuel to Site subject to adjustment at actuals. Similarly, the price of HSD is assumed to be PKR 280.7526/litre (without GST), which includes the transportation cost of fuel to Site subject to adjustment at actuals.

14.2.11 The exchange rate has been assumed to be PKR 265.95 for PKR/USD.

14.2.12 All risks emanating from the New PPA (considering that the Petitioner has not to date received any version of the same from the Power Purchaser) will be treated as pass-through items or otherwise shall result in a supplemental tariff for the Petitioner.

14.2.13 Anticipated average site conditions that have been used in the calculation of net output and heat rate are at average ambient temperature of 30-degree centigrade, average ambient pressure 996 mbar and 60% average relative humidity. If there is any change in the foregoing assumptions, the same will have an impact on the de-rating curve.

14.2.14 Annual Scheduled, Washing and Maintenance Outages, excluding outages on account of Power Purchaser, shall be allowed as per Original PPA without any liquidated damages. Liquidated damages for outages in excess thereof and their computation shall be in accordance with the New PPA. Additionally, it has been assumed that the scheduled outage allowance saving in any

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agreement year shall be carried forward to the subsequent years for necessary adjustment, until the expiry of New PPA.

14.2.15 All invoicing and payment terms are assumed to be with a credit period of 25 days subject to terms and conditions given in the New PPA.

14.2.16 LSFO & Gas (RLNG) are primary fuel, HSD operation will be allowed by NPCC / System Operator in case of contingency.

14.2.17 Energy Block I and Energy Block IIB heat rates are with full module, in case of half module, heat rate will be increased with factor of 1.03.

14.2.18 Tolerance of + / - 3 % in dispatch is assumed during normal operation.

14.2.19 The average Facility availability shall be 88.4%, at assumed load factor of 30%, over New PPA term.

14.2.20 The dispatch criteria will be on Energy Purchase Price.

14.2.21 All requested indexations will be allowed.

14.2.22 Ambient temperature and correction factors will be applied as per PPA Second Amendment Agreement.

14.2.23 Part load adjustment charges will be as per agreed table as per PPA Second Amendment Agreement.

14.2.24 Number of hot, warm, cold starts will be as per Original PPA Schedule-2. The extra cost of all such starts will be pass-through to the Purchaser as per below table with indexation of HSD & Gas Price.

14.2.25 Reference Unit Start-Up Cost are shown below:

Type of start	Reference Single GT Start-Up Charges	Reference Half Module Start-Up Charges (1GT*ST)	Reference Full Module Start-Up Charges (2 GT*ST)
	PKR	PKR	PKR
Hot Start (Gas)	355,354	2,132,121	4,264,242
Hot Start (HSD)	801,646	3,231,664	6,463,328
Warm Start (Gas)	355,354	2,842,828	5,685,656
Warm Start (HSD)	801,646	4,308,885	8,617,771
Cold Start (Gas)	355,354	4,264,242	8,528,484
Cold Start (HSD)	801,646	6,463,328	12,926,656

Note: *No free starts ups have been assumed. Further, the above costs shall be subject to indexations as applicable on FCC.*

14.2.26 All rights, obligations and risks not specified in this Tariff Petition pertaining to matters including termination, suspension, compensation, force majeure, change in law, change in tax, dispute resolution, any incentives and concessions shall be similar to the precedent power purchase agreements for thermal projects selling electric power to the national grid and as mutually agreed between the Petitioner and the purchaser.

14.2.27 The New PPA shall include security for payment obligations of the purchaser.

14.2.28 It is assumed that the National CPI, as published by the Pakistan Bureau of Statistics shall be allowed without any delay.

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14.2.29 The primary fuel for Plant 1 is LSFO while Gas/RLNG will be used as and when available basis. There will be no LD levied in case non-availability of Plant-1 due to unavailability of Gas/RLNG and HSD fuel. Reference Generation Tariff on RLNG and HSD are requested to cover availability of fuel in emergency situations. The Petitioner can support the Power Purchaser on HSD fuel for 3 days subject to prior notice of 15 days.

14.2.30 Primary fuel for Plant-2 is Gas (RLNG), on as and when available basis and HSD is back up fuel with 7 days inventory. There will be no LD due to non-availability of Gas (RLNG) as there is firm commitment for supply of Gas (RLNG). On HSD fuel plant obligated running maximum duration is 7 days. HSD replenishing mechanism will be agreed in New PPA.

14.2.31 All of the above assumptions and terms and conditions shall be included in the Reference Generation Tariff and incorporated in the New PPA between the Petitioner and the Power Purchaser.

14.3 ASSUMPTIONS IN RELATION TO THE SWITCHYARD FACILITY CHARGES

14.3.1 The auto-transformer contractual capacity is 400MVA, in case any overloading out of merit generation will be on the account of the Power Purchaser.

14.3.2 Normal Fixed O&M is included in the Tariff. If any replacement is required due to the grid code or 2022 Procurement Regulations will be passed on to the Power Purchaser

14.3.3 No provision for income tax has been accounted for in the Tariff Petition. In case the Petitioner is obligated to pay any tax in relation to the Switchyard Facility, the exact amount paid by the Petitioner may be reimbursed by the Power Purchaser. The aforementioned payment may be considered as a pass-through item.

14.3.4 Any duties, levies, charges, or other impositions applicable on the Petitioner with respect to the Switchyard Facility (whether federal or provincial) not considered in the Tariff Petition will be treated as a pass-through item under the New PPA.

14.3.5 No provision for the payment of Workers Welfare Fund and Workers Profit Participation has been made in the Tariff Petition. In case, the Petitioner has to pay any such fund, it be treated as a pass-through item under the New PPA.

14.3.6 Any other cost implications resulting from the New PPA will be allowed as a pass-through item to the Petitioner.

KOT ADDU POWER COMPANY LIMITED

SECTION 15
CONCLUSION

F/A-2

15. CONCLUSION

15.1 In light of the submissions, including the technical and financial analysis and information contained in this Tariff Petition, it is hereby requested:

(i) That given the remaining useful life of the Facility (as highlighted above in Section 5.1.3) and as the Petitioner is desirous of continuing to generate power for onward sale to the Power Purchaser, the Reference Generation Tariff in respect of Plant 1 and Plant 2 shall be approved by the Authority in accordance with the applicable NEPRA laws, along with other enabling provisions of law;

(ii) That the honorable Authority directs CPPA-G to act on behalf of the suppliers of last resort under Regulation 8(1)(f) of the 2022 Procurement Regulations and negotiate, finalize and execute the New PPA with the Petitioner;

(iii) That the Switchyard Facility Charges, as detailed in Section 12 shall be approved by the Authority;

(iv) That the Petitioner is allowed to recover the Switchyard Facility costs of PKR 303.2 million plus the costs being incurred by the Petitioner on a day-to-day basis for making the Switchyard Facility available, up until the date of the final determination by the honorable Authority in respect of the Tariff Petition; and

(v) Any other relief that the honorable Authority may deem fit and appropriate.

15.2 It is further requested that the honorable Authority determines the Tariff Petition in an expeditious manner given that the Original PPA has expired and there is immediate and continued need for the Facility to operate without any form of disruption.

Respectfully submitted,

FOR AND ON BEHALF OF THE PETITIONER,

KOT ADDU POWER COMPANY LIMITED

MUHAMMAD RAFNAWAZ ANJUM
CHIEF FINANCIAL OFFICER

A. ANTHONY RATH
COMPANY SECRETARY

KOT ADDU POWER COMPANY LIMITED

ANNEXURE A

SHAREHOLDING PATTERN

ANNEXURES

KAPCO

Kot Addu Power Company Limited

5 B/3, Gulberg III
Lahore 54660, Pakistan
UAN +92 42 111 152 726
PABX +92 42 3577 2912-21
Fax +92 42 3577 2922

CERTIFICATE

By virtue of Board Resolution dated October 19, 2022 (copy attached), passed by the Board of Directors of Kot Addu Power Company Limited (the "Company"), Mr. Aftab Mahmood Butt (being the Chief Executive) has *inter alia* been appointed as authorized representative of the Company and has been authorized to address, perform, negotiate, decide, execute, implement and undertake all matters of any nature whatsoever in relation to the Tariff Petition.

The Chief Executive has also been empowered to further sub-delegate any or all of his powers and authorities jointly (any two) to General Manager Engineering, General Manager Legal/Company Secretary and/or General Manager Finance/Chief Finance Officer.

The Chief Executive, being the authorized representative of the Company and by virtue of powers granted, hereby, authorizes the following executives of the Company to jointly sign and execute the Tariff Petition to be filed before National Electric Power Regulatory Authority (NEPRA):

1. Mr. A. Anthony Rath (Company Secretary/General Manager Legal); and
2. Mr. Rabnawaz Anjum (Chief Finance Officer/General Manager Finance)

KOT ADDU POWER COMPANY LIMITED

Date: March 6, 2023

Aftab Mahmood Butt
Chief Executive

Power Project
Kot Addu Power Complex
Kot Addu, District Muzaffargarh
Punjab - Pakistan
PABX +92 66 230 1041 - 49
Fax +92 66 230 1025

Registered Office
Office No. 309, 3rd Floor
Evacuee Trust Complex
Agha Khan Road, F 5/1
Islamabad, Pakistan

info@kapco.com.pk

www.kapco.com.pk

ReportID : SH0930MRG(10D09)
UserID : MANAGER

KOT ADDU POWER CO. LIMITED
Pattern of Shareholding
As On 30/09/2022

Date : 11/10/2022

NO. OF SHAREHOLDERS	<--- HAVING SHARES ---> From	To	SHARES HELD	PERCENTAGE
1218	1	100	59893	0.0068
47944	101	500	23715779	2.6942
3703	501	1000	3573157	0.4059
5970	1001	5000	16755064	1.9034
2146	5001	10000	17098506	1.9425
904	10001	15000	11636150	1.3219
569	15001	20000	10417000	1.1834
387	20001	25000	9074368	1.0309
269	25001	30000	7659634	0.8702
151	30001	35000	5002391	0.5683
157	35001	40000	6029432	0.6850
93	40001	45000	4015373	0.4562
169	45001	50000	8311998	0.9443
61	50001	55000	3236390	0.3677
70	55001	60000	4119236	0.4680
35	60001	65000	2215178	0.2517
53	65001	70000	3624971	0.4118
44	70001	75000	3242577	0.3684
30	75001	80000	2356753	0.2677
29	80001	85000	2406051	0.2733
25	85001	90000	2202417	0.2502
16	90001	95000	1486877	0.1689
90	95001	100000	8969027	1.0189
23	100001	105000	2347774	0.2667
14	105001	110000	1518503	0.1725
15	110001	115000	1692600	0.1923
20	115001	120000	2370247	0.2693
12	120001	125000	1485537	0.1688
10	125001	130000	1278034	0.1452
8	130001	135000	1063448	0.1208
12	135001	140000	1665137	0.1892
14	140001	145000	2006335	0.2279
20	145001	150000	2989909	0.3397

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER CO. LIMITED
Pattern of Shareholding
As On 30/09/2022

NO. OF SHAREHOLDERS	<— HAVING SHARES —> From	To	SHARES HELD	PERCENTAGE
7	150001	155000	1075271	0.1222
8	155001	160000	1273500	0.1447
8	160001	165000	1302765	0.1480
9	165001	170000	1519707	0.1726
2	170001	175000	350000	0.0398
2	175001	180000	354307	0.0403
6	180001	185000	1099018	0.1249
5	190001	195000	968877	0.1101
27	195001	200000	5384961	0.6118
7	200001	205000	1414144	0.1607
9	205001	210000	1873200	0.2128
5	210001	215000	1066971	0.1212
1	215001	220000	218900	0.0249
1	220001	225000	222000	0.0252
3	225001	230000	685400	0.0779
5	230001	235000	1167510	0.1326
2	235001	240000	475500	0.0540
4	240001	245000	969745	0.1102
5	245001	250000	1250000	0.1420
1	250001	255000	255000	0.0290
2	255001	260000	520000	0.0591
3	260001	265000	792000	0.0900
1	265001	270000	268500	0.0305
2	275001	280000	556500	0.0632
2	280001	285000	564500	0.0641
3	285001	290000	861140	0.0978
13	295001	300000	3890000	0.4419
3	300001	305000	910500	0.1034
2	305001	310000	618000	0.0702
2	310001	315000	628000	0.0713
1	315001	320000	315500	0.0358
2	320001	325000	650000	0.0738
1	335001	340000	337500	0.0383

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER CO. LIMITED
Pattern of Shareholding
As On 30/09/2022

NO. OF SHAREHOLDERS	<---- HAVING SHARES ----> From	To	SHARES HELD	PERCENTAGE
3	345001	350000	1049900	0.1193
1	350001	355000	351355	0.0399
2	355001	360000	712500	0.0809
2	360001	365000	724900	0.0824
2	365001	370000	736000	0.0836
3	370001	375000	1122000	0.1275
2	380001	385000	766859	0.0871
1	385001	390000	387500	0.0440
7	395001	400000	2800000	0.3181
5	400001	405000	2011110	0.2285
1	410001	415000	412000	0.0468
2	415001	420000	836500	0.0950
2	420001	425000	846431	0.0962
1	425001	430000	430000	0.0488
2	430001	435000	869000	0.0987
1	435001	440000	437143	0.0497
1	440001	445000	444000	0.0504
2	445001	450000	900000	0.1022
2	450001	455000	908837	0.1032
1	455001	460000	459000	0.0521
2	460001	465000	930000	0.1057
1	470001	475000	475000	0.0540
2	480001	485000	964500	0.1096
1	485001	490000	488050	0.0554
8	495001	500000	4000000	0.4544
2	500001	505000	1003001	0.1139
2	520001	525000	1046000	0.1188
2	525001	530000	1052884	0.1196
1	535001	540000	539000	0.0612
1	545001	550000	550000	0.0625
1	555001	560000	557500	0.0633
1	575001	580000	576500	0.0655
2	595001	600000	1200000	0.1363

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER CO. LIMITED
Pattern of Shareholding
As On 30/09/2022

NO. OF SHAREHOLDERS	<--- HAVING SHARES ---> From	To	SHARES HELD	PERCENTAGE
1	600001	605000	605000	0.0687
1	605001	610000	609000	0.0692
1	620001	625000	623000	0.0708
2	630001	635000	1266000	0.1438
1	645001	650000	649500	0.0738
1	650001	655000	654000	0.0743
1	655001	660000	655555	0.0745
1	670001	675000	675000	0.0767
1	695001	700000	700000	0.0795
1	700001	705000	700396	0.0796
1	705001	710000	708500	0.0805
1	720001	725000	725000	0.0824
1	740001	745000	745000	0.0846
1	750001	755000	753000	0.0855
1	755001	760000	756098	0.0859
1	775001	780000	775500	0.0881
3	795001	800000	2400000	0.2726
1	815001	820000	817108	0.0928
1	820001	825000	820500	0.0932
1	865001	870000	868000	0.0986
1	870001	875000	875000	0.0994
1	955001	960000	957500	0.1088
4	995001	1000000	4000000	0.4544
1	1015001	1020000	1016366	0.1155
1	1030001	1035000	1035000	0.1176
1	1070001	1075000	1073684	0.1220
1	1095001	1100000	1100000	0.1250
1	1130001	1135000	1135000	0.1289
1	1145001	1150000	1146530	0.1302
1	1165001	1170000	1166500	0.1325
1	1180001	1185000	1181944	0.1343
1	1195001	1200000	1200000	0.1363
1	1230001	1235000	1235000	0.1403

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER CO. LIMITED
Pattern of Shareholding
As On 30/09/2022

NO. OF SHAREHOLDERS	<--- HAVING SHARES ---> From	To	SHARES HELD	PERCENTAGE
1	1255001	1260000	1260000	0.1431
1	1270001	1275000	1275000	0.1448
1	1300001	1305000	1300500	0.1477
1	1315001	1320000	1316400	0.1495
1	1330001	1335000	1335000	0.1517
1	1395001	1400000	1400000	0.1590
1	1445001	1450000	1448205	0.1645
1	1465001	1470000	1467650	0.1667
2	1495001	1500000	3000000	0.3408
1	1510001	1515000	1515000	0.1721
1	1520001	1525000	1522224	0.1729
1	1545001	1550000	1550000	0.1761
3	1555001	1560000	4676854	0.5313
1	1565001	1570000	1569000	0.1782
1	1995001	2000000	2000000	0.2272
1	2295001	2300000	2300000	0.2613
1	2975001	2980000	2976500	0.3381
1	2995001	3000000	3000000	0.3408
1	3225001	3230000	3229500	0.3669
1	3245001	3250000	3250000	0.3692
1	3715001	3720000	3718433	0.4224
1	4995001	5000000	5000000	0.5680
1	5505001	5510000	5507687	0.6257
1	5705001	5710000	5708500	0.6485
1	5730001	5735000	5731000	0.6511
1	5800001	5805000	5804000	0.6594
1	6590001	6595000	6593894	0.7491
1	7045001	7050000	7046000	0.8005
1	7465001	7470000	7469500	0.8486
1	7995001	8000000	8000000	0.9088
1	13920001	13925000	13921900	1.5816
1	18235001	18240000	18235106	2.0716
1	25880001	25885000	25881000	2.9402

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER CO. LIMITED
Pattern of Shareholding
As On 30/09/2022

NO. OF SHAREHOLDERS	<— HAVING SHARES —> From	To		SHARES HELD	PERCENTAGE
1	43995001	44000000		44000000	4.9986
1	48250001	48255000		48252429	5.4817
1	354310001	354315000		354311133	40.2510
64582			Company Total	880253228	100.0000

ReportID : SH0935MRG (10D09)
UserID : MANAGER

KOT ADDU POWER CO. LIMITED
Category of Shareholders
As On 30/09/2022

Date : 11/10/2022

Particulrs	No of Folio	Balance Share	Percentage
DIRECTORS, CEO, SPOUSE & CHILDREN	8	86005	0.0098
ASSOCIATED COMPANIES	2	402563562	45.7327
BANKS, DFI & NBFI	28	119431314	13.5678
INSURANCE COMPANIES	14	16672808	1.8941
MUTUAL FUNDS	29	5697591	0.6473
GENERAL PUBLIC (LOCAL)	60648	240070741	27.2729
GENERAL PUBLIC (FOREIGN)	3603	30356149	3.4486
OTHERS	207	42365162	4.8128
FOREIGN COMPANIES	8	9341948	1.0613
PPROVED FUND	35	13667948	1.5527
Company Total	64582	880253228	100.0000

KOT ADDU POWER COMPANY LIMITED

ANNEXURE B

MEMORANDUM & ARTICLES OF ASSOCIATION

National Transmission & Despatch Company Ltd.

General Manager (System Operation) NPCC

No. 21008-13/GM (SO)/NPCC/DDPC-1/CPPA Dated: 22-12-2022

Chief Technical Officer
CPPA-G, Blue Area,
Shaheen Plaza, Islamabad.

Subject: **Expiry of KAPCO PPA on 24-10-2022**

Reference: i) This office letter No: 160056-63/GM(SO)/NPCC/DDPC-I/KAPCO Dated: 17-10-20222
ii) This office letter No: 99-104/DMD(SO)/NPCC Dated: 18-10-20222 addressed to Managing Director (NTDC) with copy to your office.
iii) This office letter No: 160065-72/GM(SO)/NPCC/DDPC-I/CPPA-G Dated: 21-10-20222

It is apprised that PPA of KAPCO has been expired on 24th October, 2022 and since then the plant has not been given any dispatch to meet the system demand. However, the 220/132kV switchyard and other grid auxiliary services of KAPCO are being used for evacuation of power to MEPCO region as per directive of Ministry of Energy (MoE) Power division during the meeting held on 17-10-2022 and it was also decided that the matter regarding revision of PPA will be settled at the earliest. In this regard NPCC/NTDC had already furnished its comments / view vide letter at reference[ii].

Furthermore, generation from the power plant will be required in coming hot weather / summer to ensure smooth evacuation of power to MEPCO by considering safe and reliable grid & network operation at optimum system parameters. In view of forgoing, it is essential to settle the issue well in time by fulfilling the necessary contractual, legal, financial and codal formalities in coordination with relevant quarters so as to avoid any eventuality and inconvenience during the peak demand period.

(Engr. Sajjad Akhtar)
General Manager (System Operation)
NPCC, NTDC, Islamabad

C.C.
1- Additional Secretary (A-II), MoE (Power Division), A-Block Pak Secretariat, Islamabad.
2- Joint Secretary (Transmission), Ministry of Energy (Power Division), Islamabad.
3- Deputy Managing Director (SO), NPCC, NTDC, Islamabad.
4- Registrar NEPRA, NEPRA Tower, Ataturk Avenue (East) Sector G-5/1, Islamabad.
5- PS to Managing Director NTDCL, 414-WAPDA House Lahore.

ANNEXURE F

NTDC'S LETTER DATED DECEMBER 22, 2022

National Transmission & Despatch Company Ltd.

General Manager (System Operation) NPCC

No: 47-48 /GM(SO)/NPCC/DDPC-1/MoE/ Dated: 25-01-2023

Additional Secretary (A-I)
Ministry of Energy (Power Division)
2nd Floor, A Block Pak Secretariat,
Islamabad.

Subject: - Expiry of Kapco PPA on 24-10-2022

i. This office letter No: 21008-13/GM(SO)/NPCC/DDPC-1/CPPA, Dated:22-12-2022
ii. This office letter No: 160056-63/GM(SO)/NPCC/DDPC-I/KAPCO Dated 17-10-2022
iii. This office letter No: 99-104/DMD(SO)/NPCC Dated 18-10-2022 addressed to Managing Director (NTDC) with copy to your office
iv. This office letter No: 160065-72/GM(SO)/NPCC/DDPC-I/CPPA-G Dated 21-10-2022

With reference to above referred letters regarding the subject matter, it is apprised that the power purchase agreement (PPA) of Kapco has been expired on 24th October 2022 and the new PPA has not yet been settled between Kapco and CPPA-G. Apart from the salient features mentioned in this office letter under reference regarding the requirement of Kapco power plant, it is pertinent to mention that plant being equipped with black start facility has been very effective during system restoration since its commissioning at the time of Wapda and thereafter as Kapco (IPPS).

During the recent power system blackout on 23rd January 2023, Kapco power plant could help in quick restoration of system if it would be available for operations as per PPA. Though the plant was instructed for starting its units using black start facility for system restoration as per direction of Honorable Minister of Power, but the process got delayed due to non-operational status of units since expiry of PPA. However, the plant could keep their units ready for such operations as and when required, once the revised PPA between Kapco and CPPA-G is settled/finalized.

As the revision of PPA is under process between Kapco and CPPA-G, therefore the concerned parties may please be advised to expedite the process. This will enable System Operator to despatch/operate the power plant along with ancillary services to meet the system requirement as well as swift system restoration whenever required.

(Engr. Sajjad Akhtar)
General Manager (System Operation)
NPCC, NTDC, Islamabad

C.C:

1. Joint Secretary (Transmission), MoE (Power Division), Pak Secretariat, Islamabad.
2. Managing Director NTDC, 414-WAPDA House, Lahore.
3. Managing Director PPIB, Islamabad
4. Deputy Managing Director (SO) NPCC NTDC, Islamabad
5. Chief Executive Officer, CPPA-G, Shaheen Plaza, Blue Area, Islamabad.
6. Registrar NEPRA Islamabad

ANNEXURE E

NTDC'S LETTER DATED JANUARY 25, 2023

NATIONAL TRANSMISSION & DESPATCH CO. LTD

Company Secretary

No. NTDC/CS/2209-11

Dated: 07 – 12 – 2022

NOTIFICATION

Approval for concurrence of Board of Directors NTDC on the management's recommendation to CPPA-G regarding retention of KAPCO in the Generation Stack until year 2025-26 to ensure system reliability

The Board of Directors of National Transmission & Despatch Company Limited (NTDC) in its 236th meeting held on 28.11.2022 against additional agenda item No. 4 has considered the resolution proposed by the management and approved the retention of 500MW capacity from KAPCO power plant (Block – I and Block – II) up to year 2025-26 beyond its PPA expiry on 24th October 2022, which is in line with the IGCEP 2022 and owing to the area network requirements/ constraints. Moreover, the 220/132 kV substation of KAPCO is required to feed the MEPCO network. Specifically, the following should be retained to ensure adequate reliability of power supply to the area network.

- The generation units at KAPCO power plant Block – I (GT#13, GT#14 & ST#15) connected to the 220 kV switchyard and Block – II (GT #1, GT #2, HRSG #9A of ST #9 & HRSG #10A of ST #10) connected with 132 kV switchyard.
- The 220/132 kV substation of KAPCO with no expiry date.

Apart from the above technical requirements, the legal, financial, contractual matters of the PPA of KAPCO power plant should be dealt by CPPA-G.

Azhar Saleem
Company Secretary

Copy to:

1. Managing Director
2. Chief Financial Officer
3. General Manager (PSP)

KOT ADDU POWER COMPANY LIMITED

NATIONAL TRANSMISSION & DESPATCH CO. LTD

General Manager (Technical)

No. GMT/NTDC/1447-54 Dated: 13 -12-2022

Chief Executive Officer (CPPA-G),
Shaheen Plaza, Fazlul-Haq Road,
Blue Area, Islamabad.

Subject: **1600 MW CCPP – KAPCO**
Expiry of KAPCO PPA on 24/10/2022 & Subsequent Action

Ref:
i. Your letter No.DGMT-C/MT-C&R-I/KAPCO/18430-34 dated 24/10/2022.
ii. DMD (SO) NTDC letter No.99-104/DMD(SO)/NPCC dated 18/10/2022.
iii. GM (PSP) NTDC letter No.GMPSP/CETP/380/3396-98 dated 20/10/2022.
iv. Your letter No.DGMT-C/MT-C&R-I/KAPCO/19549-54 dated 21/11/2022.
v. CS NTDC Notification No.NTDC/CS/2209-11 dated 07/12/2022.

With reference to your letters referred at (i) & (iv) above regarding the subject matter; enclosed herewith is the stance of NTDC, duly approved by NTDC's Board of Directors along with the terms and conditions mentioned therein as notified by Company Secretary NTDC vide Notification referred at (v) above, for information and further necessary action as desired please.

This is issued with the approval of Engr. Dr. Rana Abdul Jabbar Khan, Managing Director NTDC.

DA / As above.

13/12/2022
General Manager (Technical) NTDC

Cc:

1. Managing Director NTDC, 414-WAPDA House, Lahore.
2. Dy. Secretary (NTDC), Ministry of Energy (Power Division), Islamabad.
3. Dy. Managing Director (SO) NTDC, Sector H-8/1, Islamabad.
4. Dy. Managing Director (P&E) NTDC, 419-WAPDA House, Lahore.
5. General Manager (PSP) NTDC, 4th Floor, PIA Tower, Egerton Road, Lahore.
6. Chief Financial Officer NTDC, 2nd Floor, Shaheen Complex, Egerton Road, Lahore.
7. Company Secretary NTDC, 407-WAPDA House, Lahore.

Master File.

ANNEXURE D

NTDC'S NOTIFICATION DATED DECEMBER 07, 2022

National Transmission & Despatch Company Ltd.

General Manager (System Operation) NPCC

No: 160056-63 /GM (SO)/NPCC/DDPC-1/CPPA-G/ Dated: 17-10-2022

Chief Executive Officer,
KAPCO Power Plant,
Kot Addu Muzaffargarh.

Subject: **KAPCO Power Plant & Switchyard Availability**

Ref: - 1) Meeting held at Ministry of Energy (Power Division) on 17-10-2022 regarding expiry of KAPCO PPA and subsequent actions.
2) Chief Technical Officer CPPA-G letter No. 17825-31, dated: 13-10-2022.

With reference to above referred meeting, chaired by Additional Secretary-I and participated by Power Division representatives, KAPCO management, NTDC System Operation and Planning departments and CPPA-G regarding expiring of KAPCO PPA and subsequent actions. Since KAPCO PPA is going to be expired on 24th October, 2022 it is therefore requested that KAPCO will ensure the availability of its 220/132 kV switchyard and other ancillary services after expiry of its PPA term on 24-10-2022 at 24:00 Hrs. The availability of KAPCO grid will support smooth operation of 220/132 kV network for continuity of power evacuation to MEPCO and associated region.

(Engr Sajjad Akhtar)
General Manager (System Operation)
NPCC/NTDC, Islamabad

C.C:

- Additional Secretary A-II, MoE (Power Division), Pak Secretariat Islamabad.
- Joint Secretary Transmission, NTDC MoE (Power Division), Pak Secretariat Islamabad.
- Managing Director, NTDC WAPDA House Lahore.
- Deputy Managing Director (SO), NPCC NTDC Islamabad.
- Chief Executive Officer, CPPA-G, Shaheen Plaza Blue Area Islamabad.
- Chief Technical Officer, CPPA-G, Shaheen Plaza Blue Area Islamabad.
- Registrar NEPRA, NEPRA Tower, Attaturk Avenue G-5/1 Islamabad.

KOT ADDU POWER COMPANY LIMITED

KOT ADDU POWER COMPANY LIMITED

ANNEXURE E

COPY OF MEPCO LETTER DATED AUGUST 11, 2021

MEPCO

Office of the, Chief Executive Officer, MEPCO Multan. Ph: 0619220182

No. 3227/CE/MEPCO/CSD/M(Mkt) Dated: 11/08/2021

Shakeel Ahmad,
Additional Director, Registrar Office NEPRA,
NEPRA Tower Avenue (East), G5/1, Islamabad.

Sub: APPLICATION OF KOT ADDU POWER COMPANY LIMITED FOR EXTENSION IN THE TERM OF ITS GENERATION LICECE NO. IPGL/020/2004

Ref: Your office letter No.NEPRA/DG(Lic)/LAG-18/31338 dated:09.07.2021

With reference to above, some facts about KAPCO are as under;

1. KAPCO Power House is a primary source of 15No. Grid Stations owned by MEPCO, 01 No. consumer Grid Station with total installed capacity 822.5 MVA & 01 No. Grid Station of FESCO comprising of far flung area of Kot Addu, Layyah, Chowk Munda, Chowk Azam, Rang Pur, Kot Sultan, Noor Ahmad Wali, Shadan Lund and Tounsa Sharif.
2. Alternate source of above Grid Station is TPS Muzaffargarh & 220KV Muzaffargarh. TPS Muzaffargarh is already abandoned and 220KV Muzaffargarh is also overloaded. Low voltage problem may also aggravate in case of feeding from alternate source specially in summer peak.
3. Even in present scenario MEPCO faces low voltage problem on the tail end Grid Station's connected with KAPCO Power House especially in peak season of summer, for which KAPCO be advised to supply rated voltage at MEPCO Grid stations.

It is therefore submitted that above ground realities may be kept in view and the subject case may be decided as per NEPRA criteria /procedure please.

DA/A/B Annexe

11/8/21
General Manager (CS)
MEPCO HQ, Multan.

CC to:
1. GM (Op) MEPCO HQ Multan.
2. Chief Engineer (T&G) w.r.t. SE GSO letter No. 17722-23 dated: 06-08-2021.
3. Finance Director MEPCO HQ Multan.
4. SO to CEO MEPCO HQ Multan.
5. SE GSO Circle Multan.

KOT ADDU POWER COMPANY LIMITED

ANNEXURE F

COPY OF NPCC'S LETTER DATED NOVEMBER 20, 2020

No: 15373-77/GM (SO)/NPCC/DDPC-1/CPPAG/ Dated: 20-11-2020

Chief Technical Officer
CPPA-G, Blue Area,
Islamabad

Subject: **Impact of Early Retirement of Power Projects Under 1994 Power Policy on System Operations.**

Reference: (i) CPPA-G Letter No. CPPA-G/2020/CTO/22275-80 Dated: 17-11-2020.
(ii) CPPA-G Letter No. CPPA-G/2020/CTO/22281-86 Dated: 17-11-2020.

is apprised that NTDC power system planning department in coordination of this office and her relevant NTDC offices has worked on the subject matter as desired by the 'Committee for egotiation with IPPs' formed pursuant to CCoE decision of 20th May 2020. The preliminary sessment of the future requirements of the existing IPPS of 1994 policy is based on the lowing aspects:

a. Existing system performance and available future grid system expansion plan for the next 5 years.

b. Consideration of IPPs fulfilling the following grid system operational requirements:

- Grid constraint management and voltage stability support, especially during high demand scenario in summer
- Economical power dispatch
- Ramping capability and load following capability especially considering increas

NOT ADDU POWER COMPANY LIMITED

required in medium to long term [illegible] production simulation (generation capacity analysis) and grid system operational support studies. The detailed assessment would also include (i) technical examination/inspection/test of the generation facilities to ascertain their current health, emissions, efficiency and longevity and (ii) assessment of potential capacity and/or energy to DISCOs in the bilateral contract market envisaged under the CTBCM.

4. The results of the preliminary assessment by NTDC regarding IPP requirements under 1994 Policy is provided in the attached table.

Submitted for your information and further analysis.

(Engr. Muhammad Ayub)
General Manager (System Operation)
NPCC, NTDC, Islamabad

C.C.

1. Managing Director NTDC, 414-Wapda House Lahore
2. Dy. Managing Director (P&E), NTDC, WAPDA House Lahore
3. Dy. Managing Director (AD&M), NTDC, 413-WAPDA House Lahore
4. General Manager (Power System Planning), NTDC, PIA Tower Lahore

KOT ADDU POWER COMPANY LIMITED

Priority Proposed for the Power Generation Projects Under 1994 Policy

			Priority			Remarks
A. IPPs under 1994 Policy						
1345	RFO, HSD & FLNG	2023	✓			• Its generators are connected at two volta levels (220 & 132 kV). • It has two components: (i) Generators; a 220/132 kV grid station with 500 MVA ca feeding MEPCO. • Its 220/132 kV grid station is required for system operational support. • May be considered as merchant plant aft expiry of its PPA. • Detailed feasibility study from independ consultant is required to determine the quantum of generation capacity require future as well as to assess the potential benefits of its utilization for peaking dut
1207	RFO	2027			✓	• Not required for system operational sup • M/s HUBCO is considering to sell its 600 power to KE by converting 2 out of 4 un oil to coal.

NOT ADDU POWER COMPANY LIMITED

124	RFO	2027	✓			• Required till the completion of Lahore North 500/220/132 kV grid station (expected in 20 • This plant is candidate for consideration as merchant plant after expiry of its PPA, in vie of system operational support capability wi needed.
[illegible]	GAS	2030	✓			• Provides grid system operational support to feed QESCO • Plant is unavailable since October 2019 due t expiry of gas contract between the complex SSGC- RLNG contract between the parties is not yet finalized.
549	GAS	2030	✓			• Low cost dedicated gas plant.
191	RLNG	2030	✓			• Required for grid constraint management du summer season in future especially in cas reduction in dispatch of Trimmu power p (expected COD in Dec-2020) which may either due to generator outages or unavailab of RLNG.
350	RFO	2028		✓		• Wide operating range of generation. • May be considered as a merchant plant a expiry of PPA. • Its dependable capacity may also help evacuate additional ARE generation in the N system which needs further exploration.

KOTADDU POWER COMPANY LIMITED

			Critically Required	Critically required	Not Required	Remarks
						• Same remarks as for AES LALIR
350	RFO	2028		✓		• Grid operational support is not so sig especially in view of large sized RLNG in vicinity. • Generation cost is lower.
395	RLNG	2030		✓		
126	RFO	2030		✓		• Required for system operational supp completion of Lahore (North) 500/22 grid station (expected in 2023).
213	RLNG	2027	✓			• Low cost on Raw gas.
28	RLNG	2032			✓	• Grid operational support is not so sig especially in view of large sized RLNG • Generation cost is lower than RFO.
10	RLNG	2044			✓	• Grid operational support is not so sig especially in view of large sized RLNG its vicinity. • Generation cost is lower than RFO.

KOT ADDU POWER COMPANY LIMITED

ANNEXURE G

COPY OF NPCC'S LETTER DATED JULY 19, 2021

General Manager (Technical) NTDC,
614-WAPDA House
Lahore.

Subject: **KAPCO Generation License Renewal**

Ref'nce:
i) Letter No. NEPRA/DG(Lic)/LAG-18/31338 Dated July,09,2021
ii) GM PSP Letter No. GMPSP/CELF&GP/MLF&GP/4457-61 Dt: 27-11-2020
iii) CPPA-G/2019/CEO/SMD/251-259 Dated November,29,2019
iv) CPPA-G/CTO/DGM(Conv)/MT (C&R)/KAPCO/8298-8304 Dt: 24-04-2020

The scope of NPCC under the ambit of NTDC is economic dispatch and system operation in safe, stable and reliable manner as well as operation planning upto a maximum horizon of one year. Since long term generation and transmission planning is carried out by Power System Planning, therefore the impact of generation license renewal / PPA extension of KAPCO on overall demand-supply position has already been taken into consideration in IGCEP, as pointed out in referred letter (ii).

Being System Operator, NPCC would like to take this opportunity to highlight some issues that will be faced from network operation point of view, in case generation of KAPCO becomes unavailable in existing network.

- KAPCO consists of 10 GTs & 5 STG, (Combined Cycle) Power Plant having total capacity of 1345 MW and is considered economical and efficient power plant (Quick start / stop plant) as compared to Muzaffargarh, Lalpir & PakGen power plant in the same area.
- KAPCO Power House is located at critical location and serving as a major feeding source for MEPCO, FESCO & PESCO areas.
- During summer peak season, KAPCO supports overloading of 500/220 kV Transformers of New Multan Grid Station.
- Besides the active power provision, it is also a major Reactive power source helping in maintaining the voltage profile of the area.
- It has 500 MVA transformation capacity from 220KV to 132 KV in addition to 540 MW generation on 132 KV side, thr[illegible]gh which approximately 800 MW power is being dispersed to MEPCO, FESCO & PESCO esp[illegible]ially in summer season through 132 kv n[illegible]tork

KOT ADDU POWER COMPANY LIMITED

No: 11209-15/GM(SO)/NPCC/DDPC-1/KAPCO/ Dated: 19-07-2021

- It has Black start facility which is helpful in system restoration during major or partial system disturbances.
- KAPCO power house is interlinked with NTDC Network and Muzaffargarh power house through 06 No: 220 Kv transmission lines providing safe power evacuation of its own and adjacent power houses (Muzaffargarh, Lalpir & Pakgen) to the load center.

Foregoing in view, it is submitted that the request of KAPCO for generation license extension be considered together with the recommendation of Power System Planning in IGCEP and NTDC Transmission Expansion Plan.

19/7/21

(Muhammad Masud ur Rehman)
General Manager (System Operation)
NPCC, NTDC, Islamabad

Copy to:

i. Managing Director, NTDCL, 414-WAPDA House, Lahore.
ii. Deputy Managing Director, (P&E) NTDCL, 419-WAPDA House, Lahore.
iii. Member Finance WAPDA, WAPDA House, Lahore.
iv. Khalid Pervaiz Bajwa, General Manager KAPCO, Kot Addu.
v. Chief Executive Officer, CPPA-G, Blue Area, Shaheen Plaza, Islamabad.
vi. Chief Engineer (Op'n Plng:) NPCC, NTDC Islamabad.

KOT ADDU POWER COMPANY LIMITED

ANNEXURE H

COPIES OF NTDC'S LETTER DATED JANUARY 23, 2023

National Transmission & Despatch Company Ltd.

General Manager (System Operation) NPCC

No. 26-32 /GM(SO)/NPCC/DPC/CPPAG/ Dated: 23-01-2023

Chief Executive Officer,
CPPA-G, Shaheen Plaza,
Blue Area, Islamabad.

Subject: - Emergency Operation of KAPCO Power Plant Following Total System Collapse

It is brought to your kind attention that a total system collapse occurred on January 23, 2023. In order to assist with the restoration of the system after the blackout, under the direction of the Honorable Federal Minister for Energy, it has been deemed necessary to temporarily operate the KAPCO power plant whose power purchase agreement (PPA) has expired and is currently under review for renewal.

It is important to note that any resulting arrangements, liabilities, and commercial transactions with the power plant may be resolved once National Grid is fully restored to a normal state.

This information is provided for your attention and any further actions that may be required on your part.

(Engr: Sajjad Akhtar)
General Manager (System Operation)
NPCC, NTDC, Islamabad

CC:

- Additional Secretary-I, Power Division (MoE), Islamabad
- Chairman NEPRA, NEPRA Building G-5 Islamabad
- Joint Secretary (Transmission), Power Division (MoE), Islamabad
- Managing Director NTDCL, 414-WAPDA House, Lahore
- Deputy Managing Director (System Operations), NPCC NTDC Islamabad
- Chief Financial Officer CPPAG, Islamabad
- Chief Executive Officer, KAPCO Power, Kot Addu.

ANNEXURE I

COPIES OF CPPA-G'S LETTER DATED JANUARY 24, 2023

Co. Sec.

Central Power Purchasing Agency (Guarantee) Limited

A Company of Government of Pakistan

Office of Chief Executive Officer

No. DGMT-C/MT-C&R-I/KAPCO/ 10005-14 | Date: 24-1-23

The Chief Executive Officer
Kot Addu Power Company Limited,
5 B/3 Gulberg- III Lahore.

Subject: 1600 MW CCPP- KAPCO Kot Addu
Emergency Operation of KAPCO Power Plant following total System collapse

Reference: [1] NPCC No. 26-32/GM(SO)/NPCC/DPC/CPPA-G dated 23-01-2023
[2] CPPA-G Email Dated 23-01-2023

General Manager (SO) NPCC vide its letter referred above [1] conveyed the directions of Honorable Federal Minister for Energy regarding the operation of KAPCO Power Plant temporarily in Open Cycle Mode to assist the restoration of Power System after the Country wide Black-Out.

Accordingly, CPPA-G vide email dated 23-01-2023 referred above [2] requested KAPCO to comply with the Dispatch Instructions of NPCC until the emergency is over. Further, CPPA-G will pay for the Energy Payments against the actual NEO delivered during this operation of KAPCO as per applicable rates allowed in the expired PPA.

This is to clarify that the operation of KAPCO Power Plant in Open Cycle mode in the absence of PPA has been made solely in the larger national interest to overcome the emergency occurred on account of country wide Power System breakdown.

Chief Technical Officer
CPPA-G Islamabad

Copy to:

1. Additional Secretary -I, Power Division (MoE), Islamabad.
2. Chairman NEPRA, NEPRA Building G-5 Islamabad.
3. Joint Secretary (Transmission), Power Division (MoE), Islamabad.
4. Managing Director NTDC, 414 WAPDA House, Lahore.
5. Deputy Managing Director (System Operation), NPCC NTDC Islamabad.
6. General Manager (SO) NPCC H-8/1 Islamabad.
7. Chief Executive Officer, CPPA-G Islamabad.
8. Chief Financial Officer, CPPA-G Islamabad.
9. Chief Legal Officer, CPPA-G Islamabad.

- Master File

Shaheen Plaza, Fazlul-Haq Road, Blue Area Islamabad
☎ +92 51 921 6954 🖷 +92 51 921 6949

ANNEXURE J

COPIES OF NTDC'S LETTER DATED JANUARY 25, 2023

National Transmission & Despatch Company Ltd.

General Manager (System Operation) NPCC

No: 48-48 /GM(SO)/NPCC/DDPC-1/MoE/ Dated: 25-01-2023

Additional Secretary (A-I)
Ministry of Energy (Power Division)
2nd Floor, A Block Pak Secretariat,
Islamabad.

Subject: - Expiry of Kapco PPA on 24-10-2022

i. This office letter No: 21008-13/GM(SO)/NPCC/DDPC-1/CPPA, Dated:22-12-2022
ii. This office letter No: 160056-63/GM(SO)/NPCC/DDPC-I/KAPCO Dated 17-10-2022
iii. This office letter No: 99-104/DMD(SO)/NPCC Dated 18-10-2022 addressed to Managing Director (NTDC) with copy to your office
iv. This office letter No: 160065-72/GM(SO)/NPCC/DDPC-I/CPPA-G Dated 21-10-2022

With reference to above referred letters regarding the subject matter, it is apprised that the power purchase agreement (PPA) of Kapco has been expired on 24th October 2022 and the new PPA has not yet been settled between Kapco and CPPA-G. Apart from the salient features mentioned in this office letter under reference regarding the requirement of Kapco power plant, it is pertinent to mention that plant being equipped with black start facility has been very effective during system restoration since its commissioning at the time of Wapda and thereafter as Kapco (IPPS).

During the recent power system blackout on 23rd January 2023, Kapco power plant could help in quick restoration of system if it would be available for operations as per PPA. Though the plant was instructed for starting its units using black start facility for system restoration as per direction of Honorable Minister of Power, but the process got delayed due to non-operational status of units since expiry of PPA. However, the plant could keep their units ready for such operations as and when required, once the revised PPA between Kapco and CPPA-G is settled/finalized.

As the revision of PPA is under process between Kapco and CPPA-G, therefore the concerned parties may please be advised to expedite the process. This will enable System Operator to despatch/operate the power plant along with ancillary services to meet the system requirement as well as swift system restoration whenever required.

(Engr. Sajjad Akhtar)
General Manager (System Operation)
NPCC, NTDC, Islamabad

C.C:

1. Joint Secretary (Transmission), MoE (Power Division), Pak Secretariat, Islamabad.
2. Managing Director NTDC, 414-WAPDA House, Lahore.
3. Managing Director PPIB, Islamabad
4. Deputy Managing Director (SO) NPCC NTDC, Islamabad
5. Chief Executive Officer, CPPA-G, Shaheen Plaza, Blue Area, Islamabad.
6. Registrar NEPRA Islamabad

ANNEXURE K

COPY OF NTDC LETTER DATED OCTOBER 17, 2022

National Transmission & Despatch Company Ltd.

General Manager (System Operation) NPCC

No: 16056-58/GM (SO) NPCC/DDPC-I/CPPA-G Dated: 17-10-2022

Chief Executive Officer,
KAPCO Power Plant,
Kot Addu Muzaffargarh.

Subject: **KAPCO Power Plant & Switchyard Availability**

Ref: - 1) Meeting held at Ministry of Energy (Power Division) on 17-10-2022 regarding expiry of KAPCO PPA and subsequent actions.
2) Chief Technical Officer CPPA-G letter No. 17825-31, dated: 13-10-2022.

With reference to above referred meeting, chaired by Additional Secretary-I and participated by Power Division representatives, KAPCO management, NTDC System Operation and Planning departments and CPPA-G regarding expiring of KAPCO PPA and subsequent actions. Since KAPCO PPA is going to be expired on 24th October, 2022 it is therefore requested that KAPCO will ensure the availability of its 220/132 kV switchyard and other ancillary services after expiry of its PPA term on 24-10-2022 at 24:00 Hrs. The availability of KAPCO grid will support smooth operation of 220/132 kV network for continuity of power evacuation to MEPCO and associated region.

(Engr Sajjad Akhtar)
General Manager (System Operation)
NPCC/NTDC, Islamabad

C.C:

- Additional Secretary A-II, MoE (Power Division), Pak Secretariat Islamabad.
- Joint Secretary Transmission, NTDC MoE (Power Division), Pak Secretariat Islamabad.
- Managing Director, NTDC WAPDA House Lahore.
- Deputy Managing Director (SO), NPCC NTDC Islamabad.
- Chief Executive Officer, CPPA-G, Shaheen Plaza Blue Area Islamabad.
- Chief Technical Officer, CPPA-G, Shaheen Plaza Blue Area Islamabad.
- Registrar NEPRA, NEPRA Tower, Attaturk Avenue G-5/1 Islamabad.

KOT ADDU POWER COMPANY LIMITED

ANNEXURE L

COPY OF NTDC LETTER DATED DECEMBER 07, 2022

NATIONAL TRANSMISSION & DESPATCH CO. LTD

General Manager (Technical)

No. GMT/NTDC/1447-54 Dated: 13 -12-2022

Chief Executive Officer (CPPA-G),
Shaheen Plaza, Fazlul-Haq Road,
Blue Area, Islamabad.

Subject: **1600 MW CCPP – KAPCO**

Expiry of KAPCO PPA on 24/10/2022 & Subsequent Action

Ref:
i. Your letter No.DGMT-C/MT-C&R-I/KAPCO/18430-34 dated 24/10/2022.
ii. DMD (SO) NTDC letter No.99-104/DMD(SO)/NPCC dated 18/10/2022.
iii. GM (PSP) NTDC letter No.GMPSP/CETP/380/3396-98 dated 20/10/2022.
iv. Your letter No.DGMT-C/MT-C&R-I/KAPCO/19549-54 dated 21/11/2022.
v. CS NTDC Notification No.NTDC/CS/2209-11 dated 07/12/2022.

With reference to your letters referred at (i) & (iv) above regarding the subject matter, enclosed herewith is the stance of NTDC, duly approved by NTDC's Board of Directors along with the terms and conditions mentioned therein as notified by Company Secretary NTDC vide Notification referred at (v) above, for information and further necessary action as desired please.

This is issued with the approval of Engr. Dr. Rana Abdul Jabbar Khan, Managing Director NTDC.

DA / As above.

General Manager (Technical) NTDC

Cc:

1. Managing Director NTDC, 414-WAPDA House, Lahore.
2. Dy. Secretary (NTDC), Ministry of Energy (Power Division), Islamabad.
3. Dy. Managing Director (SO) NTDC, Sector H-8/1, Islamabad.
4. Dy. Managing Director (P&E) NTDC, 419-WAPDA House, Lahore.
5. General Manager (PSP) NTDC, 4th Floor, PIA Tower, Egerton Road, Lahore.
6. Chief Financial Officer NTDC, 2nd Floor, Shaheen Complex, Egerton Road, Lahore.
7. Company Secretary NTDC, 407-WAPDA House, Lahore.

Master File.

NATIONAL TRANSMISSION & DESPATCH CO. LTD

Company Secretary

No. NTDC/CS/2209-11 Dated: 07 – 12 – 2022

NOTIFICATION

Approval for concurrence of Board of Directors NTDC on the management's recommendation to CPPA-G regarding retention of KAPCO in the Generation Stack until year 2025-26 to ensure system reliability

The Board of Directors of National Transmission & Despatch Company Limited (NTDC) in its 236th meeting held on 28.11.2022 against additional agenda item No. 4 has considered the resolution proposed by the management and approved the retention of 500MW capacity from KAPCO power plant (Block – I and Block – II) up to year 2025-26 beyond its PPA expiry on 24th October 2022, which is in line with the IGCEP 2022 and owing to the area network requirements/ constraints. Moreover, the 220/132 kV substation of KAPCO is required to feed the MEPCO network. Specifically, the following should be retained to ensure adequate reliability of power supply to the area network.

- The generation units at KAPCO power plant Block – I (GT#13, GT#14 & ST#15) connected to the 220 kV switchyard and Block – II (GT #1, GT #2, HRSG #9A of ST #9 & HRSG #10A of ST #10) connected with 132 kV switchyard.
- The 220/132 kV substation of KAPCO with no expiry date.

Apart from the above technical requirements, the legal, financial, contractual matters of the PPA of KAPCO power plant should be dealt by CPPA-G.

Azhar Saleem
Company Secretary

Copy to:

1. Managing Director
2. Chief Financial Officer
3. General Manager (PSP)

407 WAPDA House, Lahore,| TEL:+92-42-99201330, Fax: +92-42-9920 4236 |cs@ntdc.com.pk, www.ntdc.com.pk

ANNEXURE M

RELEVANT EXTRACTS OF IGCEP 2021-2030

6.3. Annual Capacity Factors

The annual capacity factors information based on the Installed Capacity for the corresponding year, as shown in the Table 6-4 is one of the most important output of the PLEXOS tool. The drastic change in capacity factor of some plants between the years 2021 to 2030 is due to certain rationale. For example, up to January 2022, the power purchaser is obligated to utilize / despatch 66% of the three (03) RLNG based power plants i.e. Haveli Bahadur Shah, Balloki and Bhikki, under contractual binding. Beyond January 2022, these RLNG based plants will be despatched as per merit order. Similarly, for the existing imported coal-based power plants (Sahiwal CFPP, China HUBCO CFPP and Port Qasim CFPP) as well as three (03) existing local gas based power plants (Engro, Foundation & Uch-II), a minimum annual despatch of 50% is modelled as per contractual obligation, from the date of their respective CODs till the expiry of their PPAs.

Table 6-4: Annual Capacity Factors (%age)

#	Plant Name	Fuel	21	22	23	24	25	26	27	28	29	30
			(%)									
1	Engro	Gas	81.26	79.37	50.60	50.47	50.59	50.58	50.59	50.46	50.60	50.59
2	Foundation	Gas	78.04	77.88	76.59	73.02	62.64	50.47	50.47	50.35	50.48	50.47
3	Guddu-I	Gas	0.00	0.00	2.80	16.39	6.32	4.05	1.74	6.35	11.44	0.00
4	Guddu-II	Gas	60.17	55.68	41.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Guddu-V (747)	Gas	72.93	72.79	49.39	50.81	49.45	11.67	12.09	17.70	19.32	5.47
7	Liberty	Gas	69.99	63.16	40.36	38.11	39.01	38.11	37.63	0.00	0.00	0.00
8	Uch	Gas	78.29	75.19	41.66	36.33	35.92	33.88	33.88	33.89	36.67	33.89
9	Uch-II	Gas	81.80	81.39	80.26	77.49	77.10	49.62	49.63	49.47	49.67	49.67
10	KAPCO 1	RFO	14.68	16.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	KAPCO 2	RFO	3.11	4.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	KAPCO 3	RFO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Balloki	RLNG	65.72	42.45	3.56	1.19	0.10	0.11	0.12	0.39	1.32	0.00
14	Bhikki	RLNG	65.70	26.22	0.44	0.00	0.00	0.00	0.00	0.00	0.44	0.00
15	FKPCL	RLNG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	GTPS Block 4	RLNG	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	Halmore	RLNG	24.06	11.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	Haveli	RLNG	65.69	53.48	12.35	6.77	1.05	0.53	1.06	2.04	2.78	0.00
19	Nandipur	RLNG	15.21	4.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	Orient	RLNG	31.94	17.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	Rousch	RLNG	9.27	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Saif	RLNG	24.47	13.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	Saphire	RLNG	26.11	16.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	Trimmu	RLNG	0.00	92.54	78.28	64.11	25.94	14.26	15.41	18.06	19.45	6.20
25	AGL	RFO	7.61	10.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	Atlas	RFO	0.12	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ANNEXURE N

RELEVANT EXTRACTS OF IGCEP 2022-2031

National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad
Ph: +92-51-9206500, Fax: +92-51-2600026
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No: NEPRA/R/DG(Lic)/LAT-01/1550-90 February 01, 2023

Managing Director
National Transmission & Despatch Company Limited
414 WAPDA House, Sharah-e-Quaid-e-Azam
Lahore

Subject: **DETERMINATION OF THE AUTHORITY IN THE MATTER OF INDICATIVE GENERATION CAPACITY EXPANSION PLAN OF NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED (IGCEP – 2022-31)**

Reference: NTDC letter No. GMT/NTDC/T-48/596-602 dated 20.09.2022

Please find enclosed the determination of the Authority in the matter of Indicative Generation Capacity Expansion Plan (IGCEP 2022-31) (16 pages) alongwith copy of Approved IGCEP 2022-31 **(Annex-I)** and Comments of Stakeholder **(Annex-II)** for your reference, record and necessary action. The said documents are also available at NEPRA website i.e. www.nepra.org.pk

Encl: As Above

01/02/23
(Engr. Mazhar Iqbal Ranjha)
Registrar

1.	Secretary, Cabinet Division, Government of Pakistan Cabinet Secretariat, Islamabad	2.	Secretary Power Division, Ministry of Energy Government of Pakistan 'A' Block, Pak Secretariat, Islamabad
3.	Secretary Economic Affairs Division 'C' Block, Pak Secretariat, Islamabad	4.	Secretary Ministry of Planning & Development Government of Pakistan 'P' Block, Pak Secretariat, Islamabad
5.	Secretary Privatization Commission, Ministry of Privatization, Government of Pakistan, 4th Floor, Kohsar Block, Pak Secretariat, Islamabad	6.	Secretary Water & Power Government of Gilgit Baltistan Near Kara Kuram International University Gilgit
7.	Secretary Energy Department Government of Punjab EFU House, 8th Floor, 6-D Jail Road, Lahore	8.	Secretary Energy Department, Government of Sindh 3rd Floor, Start Life Building -3 Dr. Zia-ud-din Ahmed Road, Karachi

NATIONAL TRANSMISSION & DESPATCH CO. LTD

General Manager (Technical)

No. GMT/NTDC/T-48/ 596 – 602 Dated: 20 -09-2022

Syed Safeer Hussain
Registrar NEPRA
NEPRA Tower, Attaturk Avenue, G-5/1
Islamabad.

Subject: **INDICATIVE GENERATION CAPACITY EXPANSION PLAN (IGCEP) 2022-31**

Reference: i) BoD (NTDC) notification No. NTDC/CS/1781-83 dated 14.09.2022.
ii) NEPRA letter No. NEPRA/R/DG(Lic)/LAT-01/14741 dated 04.08.2022.

With reference to the above-mentioned letters, NTDC is pleased to submit the hard copy of the IGCEP 2022-31 containing the Base Case along with the following Six Nos. Additional Scenarios, for review and approval by the Authority:

i) Low Demand.

ii) High Demand

iii) Diamer Bhasha HPP in 2029.

iv) Chashma Nuclear(C-5) for Energy Security.

v) Local Coal Inclusion in 2027 & 2030.

vi) Unconstrained VRE.

This is issued with the approval of Dr. Rana Abdul Jabbar Khan, Managing Director NTDC.

DA / As Above

General Manager (Technical) NTDC

CC:

1. Joint Secretary (Transmission), MoE (PD), Islamabad
2. Managing Director, NTDC, WAPDA House, Lahore.
3. Dy. Managing Director (P&E) NTDC, WAPDA House, Lahore.
4. Deputy Managing Director (SO), NTDC, Islamabad.
5. General Manager (Power System Planning), NTDC, PIA Tower, Lahore.
6. Company Secretary (NTDC), WAPDA House, Lahore.
   Master File

KOT ADDU POWER COMPANY LIMITED

611-WAPDA House, Lahore, Pakistan| Tel:+92 42- 99202185, Fax:+92 42-99202897 | gmtech@ntdc.com.pk.

18. Only Shahtaj is taken as a committed project from Category-I and II bagasse-based projects since it has been awarded revised tariff by NEPRA. Further, yearly candidate block of 100 MW bagasse has been considered from the year 2024-25 onwards.
19. 480 MW_p of net metering is considered each year till the end of study horizon.
20. Candidate as well as committed power projects under 20 MW and connected below 132 kV (and hence, not in central dispatch) have not been considered.
21. No candidate thermal or RE projects have been considered by name.
22. Siddiqsons CFPP has been removed from the list of committed projects, due to LOS expiry and presently under litigation as per PPIB.
23. Gwadar CFPP has been considered on Local Coal as conveyed by relevant project executing agency, i.e., PPIB
24. The COD of CASA has been assumed as August 2024.
25. Diamer Bhasha HPP has been delayed beyond the study horizon of the current version of IGCEP owing to the progress made so far by the project, as decided in a meeting held at MoE (PD), among representatives from NTDC, PPIB, MoE (PD), WAPDA and MoW&R.
26. Existing Engro Powergen CCPP has been modelled as per data provided by M/s Engro CCPP representative in view of its Gas Depletion Mitigation Plan (GDMP). It is to highlight that minimum take or pay dispatch of 50% on the available yearly Permeate gas has been considered.
27. Pursuant to approved NE Policy 2021, K-Electric system has also been included in the current version of IGCEP.
28. For candidate local coal-based projects, the fixed fuel cost component (FFCC) of 11.2 $/Ton (71.821 $/kW-year) and fuel price of 9.97 $/Ton (0.88 $/GJ) have been considered as per TCEB determination of 2020 pertaining to Thar Block-II at 30.8 MTPA.
29. In order to cater for network requirements/constraints, some existing projects located near load center have been considered as "Must Run", for summer months, i.e., May to September uptill year 2025.
30. Minimum Despatch of 500 MW from Existing KAPCO CCPP (Block-I and Block-II) in the months of May to September uptill year 2025 has been considered, beyond its PPA expiry i.e., Oct. 2022, owing to network requirements/constraints, whereas, the remaining capacity (Block-III) has been retired as per PPA expiry. It is pertinent to mention that the requirement of KAPCO beyond its PPA expiry will be assessed in ongoing Transmission System Expansion Plan (TSEP), accordingly competent forum will be approached, after consensus among concerned stakeholders i.e., NTDC, CPPA-G and KAPCO, for PPA extension or otherwise and the same will be considered in next iteration of IGCEP.
31. 140 MW Habibullaah Costal (HCPC) and 31 MW Altern Energy Limited (AEL) have not been considered in the existing installed capacity owing to termination of Gas Supply Agreement (GSA) and de-licensing by NEPRA, respectively.
32. The COD of a committed project i.e., 84 MW Gorkin Matiltan HPP, has been assumed as of July 2024 instead of July 2023 in view of its latest progress.
33. Following lead time criterion for the candidate power projects has been assumed:

IGCEP 2022-31 is provided in the Table 5-2. For the purpose of the IGCEP, a power project stands retired either as per its PPA/EPA term or relevant CCoE decision. Major retirement of generation capacity for the IGCEP 2022-31 corresponds to RFO based power projects, followed by Local Gas and then RLNG based power projects.

Table 5-2: Retirement Schedule of Power Projects in the Existing NTDC System

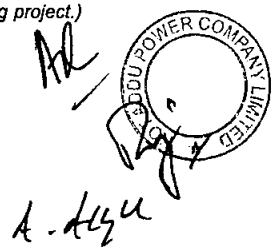
Sr. #	Name of the Power Station	Installed Capacity (MW)	Fuel Type	Retirement Year (FY)						Rationale
				23	26	27	29	30	31	
1	Guddu-II U (5-10)	620	Gas	✓						CCoE decision
2	Jamshoro-I U1	250	RFO	✓						
3	Jamshoro-II U4	200	RFO	✓						
4	Muzaffargarh-I U1	210	RFO	✓						
5	Muzaffargarh-I U2	210	RFO	✓						
6	Muzaffargarh-I U3	210	RFO	✓						
7	Muzaffargarh-II U4	320	RFO	✓						
8	KAPCO 1	400	RLNG		✓					PPA extended owing to network constraints*
9	KAPCO 2	900	RLNG		✓					
10	KAPCO 3	300	RLNG	✓						PPA expiry
11	Liberty	225	Gas			✓				
12	HUBCO	1,292	RFO			✓				
13	Kohinoor	131	RFO			✓				
14	AES Lalpir	362	RFO				✓			
15	AES Pakgen	365	RFO				✓			
16	FKPCL	172	RLNG					✓		
17	Saba	136	RFO					✓		
18	Uch	586	Gas						✓	
19	Rousch	450	RLNG						✓	
Total (MW)		**7,339**								

Note: **A sensitivity analysis to assess the requirement of existing KAPCO CCPP beyond its PPA expiry, in years to come will be conducted in the on-going Transmission System Expansion Plan (TSEP). However, considering the historical dispatch of KAPCO owing to network constraints in the region, two blocks of KAPCO have been assumed to stay in system uptill the year 2026.*

The retirement plan of K-Electric system is shown in Table 5-3. A total of 682 MW capacity is going to be retired from K-E system in the upcoming years.

#	Plant Name	Fuel	23	24	25	26	27	28	29	30	31
			%								
170	FKPCL	CCGT_RLNG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
171	Halmore	CCGT_RLNG	37.73	37.73	37.73	22.68	0.30	0.00	0.30	0.30	0.30
172	Haveli	CCGT_RLNG	11.09	5.89	3.48	5.34	4.28	1.61	1.92	2.03	2.31
173	KAPCO 1	CCGT_RLNG	35.31	35.38	35.25	0.00	0.00	0.00	0.00	0.00	0.00
174	KAPCO 2	CCGT_RLNG	11.86	11.83	11.89	0.00	0.00	0.00	0.00	0.00	0.00
175	KAPCO 3	CCGT_RLNG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
176	Nandipur	CCGT_RLNG	36.38	36.38	36.38	21.87	0.00	0.00	0.00	0.28	0.29
177	Orient	CCGT_RLNG	37.73	23.21	0.00	0.00	0.30	0.00	0.30	0.30	0.30
178	Rousch	CCGT_RLNG	0.23	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
179	Saif	CCGT_RLNG	37.73	37.73	37.73	22.68	0.00	0.00	0.10	0.30	0.30
180	Saphire	CCGT_RLNG	37.73	37.73	37.73	22.68	0.27	0.00	0.30	0.30	0.30
181	Trimmu	CCGT_RLNG	26.53	21.00	12.36	11.90	8.41	3.65	5.52	6.92	7.02
182	BQPS2	KE_CCGT_RLNG	85.24	83.52	29.84	25.80	16.42	9.17	13.47	14.12	14.08
183	BQPS3	KE_CCGT_RLNG	89.85	89.80	78.82	82.62	28.99	19.44	20.79	23.55	22.04
184	KCCPP	KE_CCGT_RLNG	85.17	82.46	22.16	18.43	11.25	7.86	10.21	13.00	12.39
185	KTGTPS	KE_CCGT_RLNG	45.16	40.58	8.61	10.11	6.67	2.90	4.06	5.02	5.51
186	SGTPS	KE_CCGT_RLNG	48.00	44.44	9.21	11.12	7.11	3.16	4.14	5.20	7.45
187	BQPS1-U1	KE_ST_RLNG	10.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
188	BQPS1-U5	KE_ST_RLNG	29.34	30.27	1.66	1.71	0.46	0.76	1.00	1.06	1.39
189	BQPS1-U6	KE_ST_RLNG	16.15	15.84	1.43	1.54	0.30	0.15	0.63	0.75	0.96
190	BQPS1-U2	KE_GT_RLNG	22.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: (All numbers highlighted in yellow color, in this table, represent retirement of the corresponding project.)



ANNEXURE O

A COPY OF THE RESPONSE LETTER

KAPCO

Kot Addu Power Company Limited

5 B/3, Gulberg III
Lahore 54660, Pakistan
UAN +92 42 111 152 726
PABX +92 42 3577 2912-21
Fax +92 42 3577 2922

REF: KAPCO/CEO/2022/464
DECEMBER 07, 2022

THE REGISTRAR,
National Electric Power Regulatory Authority
NEPRA Tower
Ataturk Avenue
G-5/1, Islamabad.

SUBJECT: DECISION OF THE AUTHORITY REGARDING TARIFF PETITION FILED BY KOT ADDU POWER COMPANY LTD FOR DETERMINATION OF REFERENCE GENERATION TARIFF

Dear Sir,

We, Kot Addu Power Company Limited (the "**Company**"), write with reference to your letter dated November 28, 2022, bearing reference No. NEPRA/R/TRF-100/22730 (the "**Letter**").

1. Based on a review of the Letter, we note that the National Electric Power Regulatory Authority (the "**Authority**") has considered the tariff petition dated October 24, 2022 (the "**Petition**") submitted by the Company and decided to not admit the Petition "*...with the directions to resubmit the said petition, if desired so, along with all documentary requirements particularly the consent of the power purchaser i.e. CPPA-G.*"

2. In view of the above, the Company takes this opportunity to highlight to the honourable Authority that we have found no basis under law for the honourable Authority to impose a requirement that a consent letter be submitted along with a tariff petition.

3. Even otherwise, the honourable Authority would note that under Rule 4(4) of the NEPRA (Tariff Standards and Procedure) Rules 1998 (the "**Tariff Rules**"), the honourable Authority shall not pass an order refusing admission of a petition, without giving the petitioner an opportunity of being heard or making a written representation. However, no such opportunity was provided to the Company.

4. Furthermore, it is a well-settled law that in exercise of discretion by quasi-judicial and government bodies, such discretion must be exercised reasonably, and clear and detailed reasons must be given for its decisions. However, the Letter does not provide any such detail or clear reasoning, thereby disallowing the Company a fair opportunity to remedy any legitimate discrepancies or omissions relating to the Petition.

5. That said, in the interest of efficacy, the Company is in the process of procuring a consent letter from the power purchaser. We humbly request, however, that the honourable Authority reconsider the imposition of this requirement considering there is no legal basis for the same.

6. It is pertinent to mention that since the original power purchase agreement dated June 27, 1996 (along with applicable tariff), was fast approaching its expiry, the Company submitted the Petition (along with mandatory documentary evidence) on an urgent basis to the honourable Authority, with any additional supporting documentation (if required) to be submitted in due course.

Power Project
Kot Addu Power Complex
Kot Addu, District Muzaffargarh
Punjab - Pakistan
PABX +92 66 230 1041 - 49
Fax +92 66 230 1025

Registered Office
Office No. 309, 3rd Floor
Evacuee Trust Complex
Agha Khan Road, F 5/1
Islamabad, Pakistan

info@kapco.com.pk

www.kapco.com.pk

KAPCO

7. The Company understands that the honourable Authority may seek additional information from the Company during tariff proceedings in respect of the Petition, however at this stage, the honourable Authority has directed the Company to resubmit the Petition with the consent letter for the purposes of successful admission. Accordingly, we are progressing the matter with power purchaser at top priority to enable the Company to expeditiously resubmit the Petition.

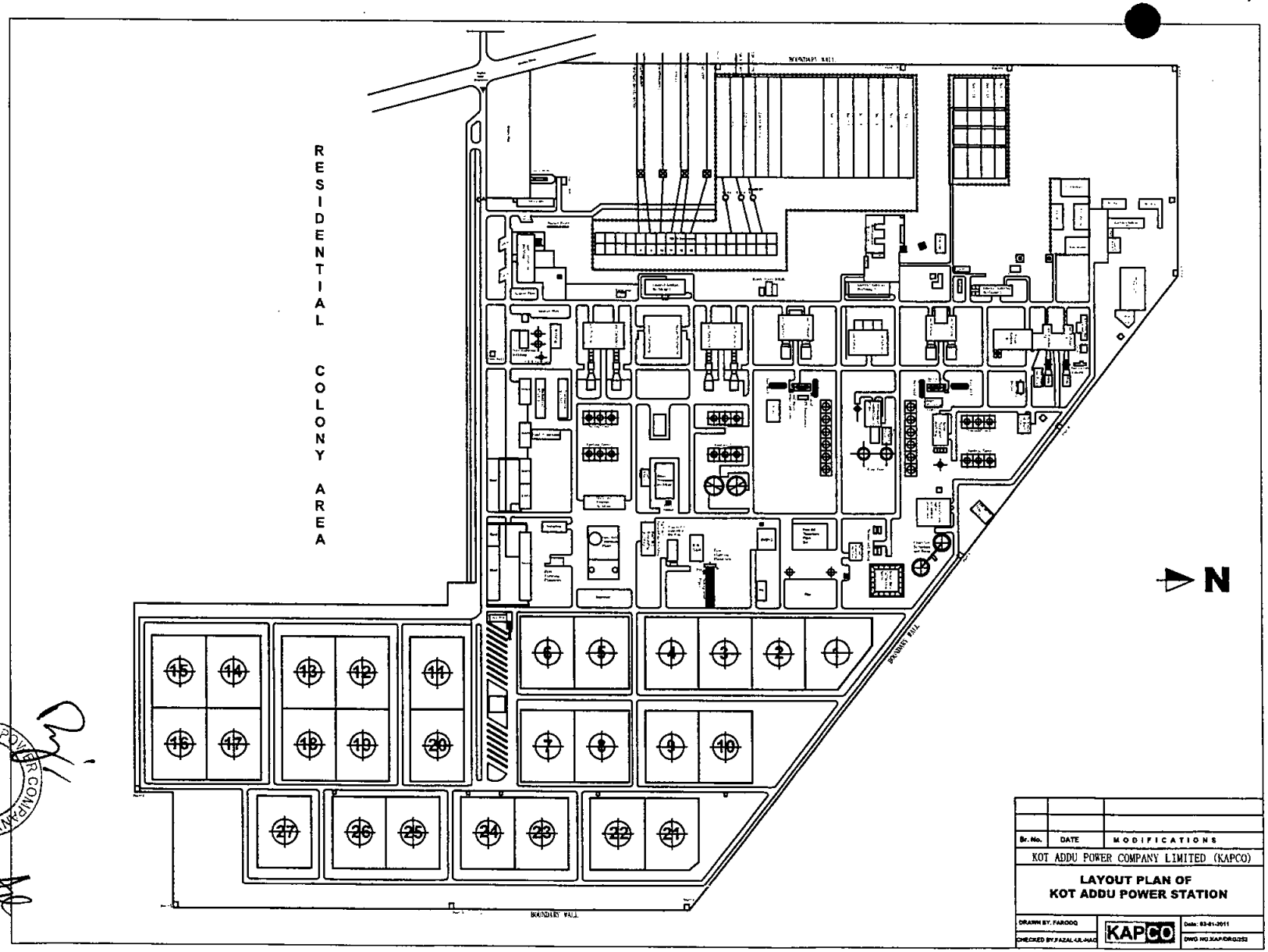
We look forward to the honourable Authority's guidance on the matter.

Yours faithfully,
For and on behalf of
KOT ADDU POWER COMPANY LIMITED

AFTAB MAHMOOD BUTT
CHIEF EXECUTIVE

ANNEXURE P

FACILITY CONFIGURATION


RESIDENTIAL COLONY AREA
BOUNDARY WALL
N
KOT ADDU POWER COMPANY LIMITED
Br. No.
DATE
MODIFICATIONS
KOT ADDU POWER COMPANY LIMITED (KAPCO)
LAYOUT PLAN OF
KOT ADDU POWER STATION
DRAWN BY: FAROOQ
CHECKED BY: FAZAL-UL-HAQ
KAPCO
Date: 03-01-2011
DWG NO: KAP-DR-0252

ANNEXURE Q

SINGLE LINE KEY DIAGRAM (SKLD)

National Transmission & Despatch CompanyLtd

Phone # : 051 - 4939217
PLC # : 4903
Fax # : 051 – 9250532/4939227

Office of the
General Manager (S.O)
National Power Control Centre
NTDC, H – 8/1, Islamabad.

No. 4119-25/GM(SO)/Addl.C.E (NRCC)/(Drawing). Dated: 24/03/2021.

General Manager Engineering,
KAPCO ,Kot Addu.

Subject **Single Line Key Diagram Of 220/132 kV Kot Addu Switchyard**

Reference: : Office letter No. KCW/2510/11 dated 24-03-2021

Enclosed please find herewith **'final single line diagram'** of subject Power Plant as per information provided/verified vide above referred letter. Kindly ensure that the designated operational code numbers have been properly marked on the respective equipment in Control room, Relay room and Switch yard. Any discrepancy observed in final drawing, be conveyed to the undersigned at the earliest.

PURPOSE: ***Proposed replacement of 220/132kV, Auto-Transformers T-3&4(2*100MVA) with 220/132kV, Auto-Transformer T-6(200MVA).***
(As per up gradation work due to aging of existing auto-transformers)

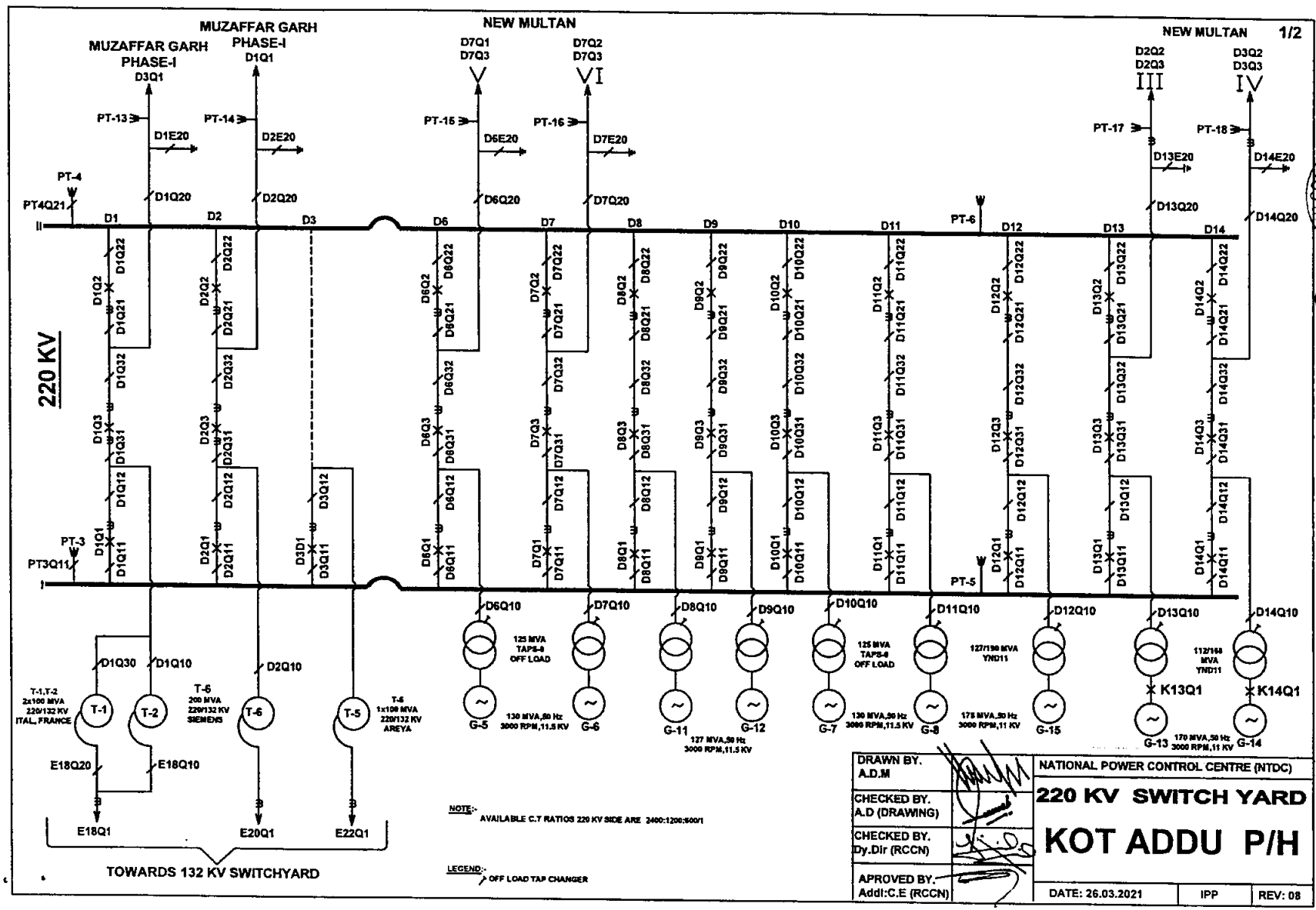
NOTE: This verified updated drawing of the station(s) will be implemented after completion of modification work during the shutdown at the station(s). The **ISOLATION** and **RESTORATION** switching for the shutdown will be carried out according to **EXISTING** and **VERIFIED UPDATED** NEW drawing respectively.

Addl: Chief Engineer (RCC(N),
NPCC, NTDC, Islamabad.

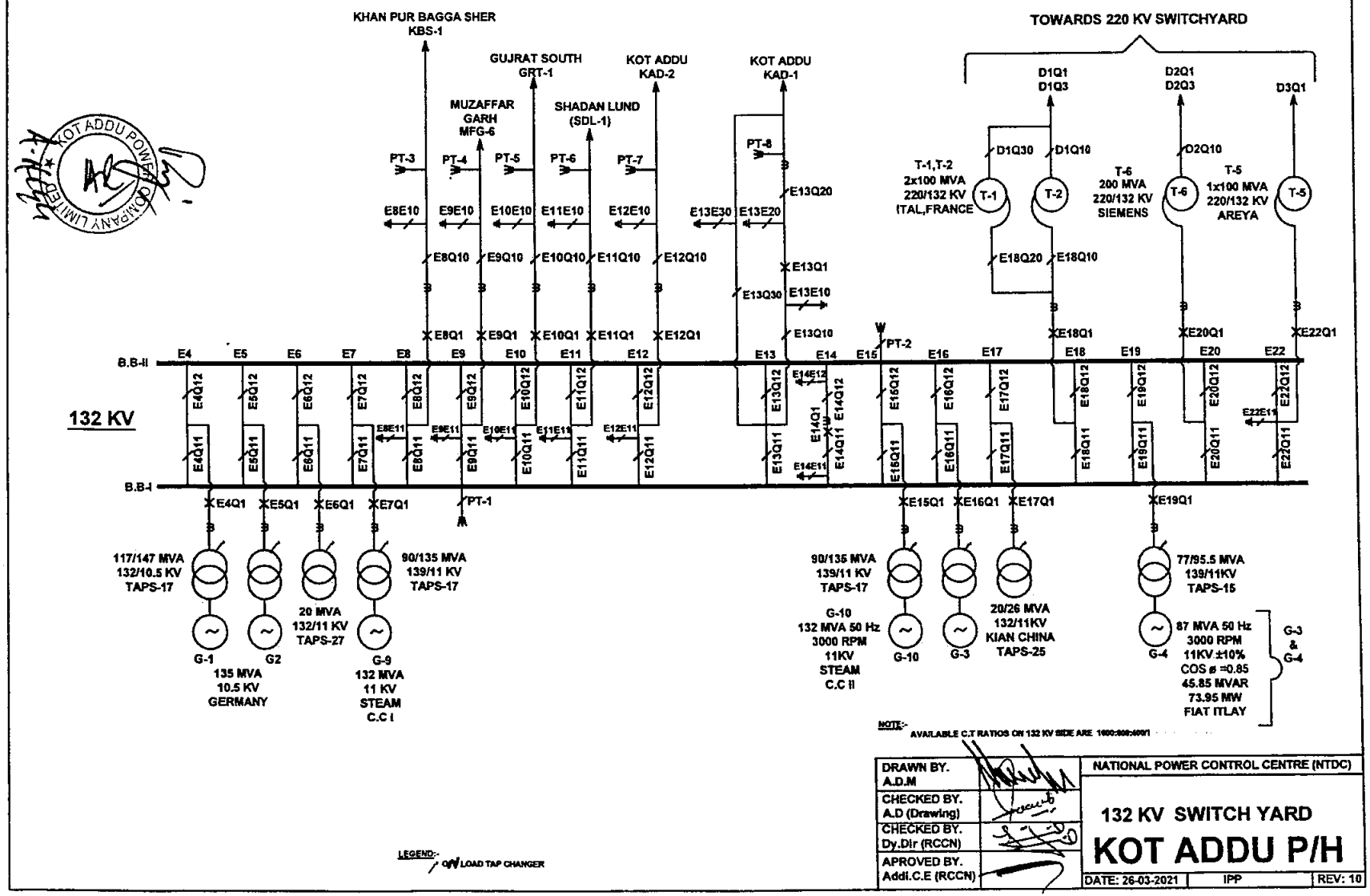
Copy for information:

- General Manager (Power Planning), NTDC, Lahore.
- CTO, CPPA-G, Islamabad
- Chief Engineer substation Design, NTDC, 143-WAPDA house Lahore.
- Chief Engineer (System Protection), NTDC, Lahore
- Director RCC (South), Jamshoro.
- Deputy Director (S/D) ,NCC, Islamabad
- Deputy Director (SCADA) NPCC, Islamabad.

KOT ADDU POWER COMPANY LIMITED



KOT ADDU POWER COMPANY LIMITED



NOTE:- AVAILABLE C.T RATIOS ON 132 KV SIDE ARE 1600:800:400/1

DRAWN BY. A.D.M	NATIONAL POWER CONTROL CENTRE (NTDC)
CHECKED BY. A.D (Drawing)	132 KV SWITCH YARD
CHECKED BY. Dy.Dir (RCCN)	KOT ADDU P/H
APROVED BY. Addl.C.E (RCCN)	DATE: 26-03-2021 | IPP | REV: 10

ANNEXURE R

COPY OF ORIGINAL GENERATION LICENSE

National Electric Power Regulatory Authority

Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad.
Ph : 9207200 Ext : 330 —— Fax : 9210215
E-mail : office@nepra.org.pk
Direct Phone : (051) 9206500

Registrar

F/E

No. NEPRA/R/LAG-18/11670-71 22-9-2004

Chief Executive Officer,
M/s. Kot Addu Power Company Ltd.
Kot Addu Gas Turbine Power Station,
District Muzaffargarh (PC 34060),

Subject: **Grant of Generation Licence IPGL/020/2004**
Licence Application No. LAG - 18
M/s. Kot Addu Power Company Ltd.

Please refer to your application No. nil, dated 17.06.2002 for a Generation Licence.

2. Enclosed here is Generation Licence No. IPGL/020/2004 granted by the Authority to M/s. Kot Addu Power Company Ltd. The Licence is granted to you pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

3. Please quote above mentioned Generation Licence No. in your future correspondence with the Authority.

DA/As above.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

22.09.04.
(Mahjoob Ahmad Mirza)

Copy for information to Director General, Pakistan Environmental Protection Agency, 44-E, Office Tower, Blue Area, Islamabad.

KOT ADDU POWER COMPANY LIMITED

National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan

GENERATION LICENCE

No. IPGL/020/2004

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), the Authority hereby grants a Generation Licence to:

Kot Addu Power Company Limited

Incorporated under the Companies Ordinance, 1984
Under Certificate of Incorporation

No. I-01977 Dated 25th April 1996

to engage in generation business subject to and in accordance with the Articles of this Licence.

Given under my hand this 22nd day of September, Two Thousand & Four, and expires on 21st day of September, Two Thousand & Twenty One.

22.09.04

Registrar

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
(NEPRA)

KOT ADDU POWER COMPANY LIMITED

Article 1
Definitions*

(1) In this Licence:

a. "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997);

b. "Agreements" means any or both of the Facilitation Agreement and the Power Purchase Agreement,

c. "Authority" means the National Electric Power Regulatory Authority constituted under Section 3 of the Act, or any successor thereof;

d. " Facilitation Agreement" means the Facilitation Agreement dated 27th June 1996 between the Licensee and the President of Pakistan;

e. "Licensee" means Kot Addu Power Company Limited;

f. "Power Purchase Agreement" means the Power Purchase Agreement dated 27th June 1996 between the Licensee and the power purchaser thereof and for the due performance of which a sovereign guarantee has been executed by the Government of Pakistan;

g. "Rules" means the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000, as amended from time to time;

(2) Words and expressions used but not defined herein bear the meaning given thereto in the Act or in the Rules.

Article 2
Application of Rules

(1) This Licence is issued subject to the provisions of the Rules, as amended from time to time.

(2) During the subsistence of the Agreements entered into by the Licensee prior to the enactment of the Act, nothing contained in the Rules or this

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

Licence shall be applied in a manner which is inconsistent with the Agreements and materially increases the obligations or impairs the rights of the Licensee under the Agreements.

Article 3
Generation Facilities

(1) The location, size, technology, interconnection arrangements, technical limits technical functional specifications and other details specific to the generation facilities of the Licensee are set out in Schedule I to this Licence.

(2) The net capacity of the generation facilities is set out in Schedule II hereto.

Article 4
Term

(1) Pursuant to Rule 5 of the Rules, this Licence is granted for a term of seventeen (17) years.

(2) Unless revoked earlier, the Licensee may, ninety (90) days prior to the expiry of the term of the licence, apply for renewal of the Licence under the Licensing (Application and Modification Procedure) Regulations, 1999.

Article 5
Licence Fee

The Licensee shall pay to the Authority the Licence fee in the amount and manner and at the time specified in the National Electric Power Regulatory Authority (Fee) Rules, 2002.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
(NEPRA)

KOT ADDU POWER COMPANY LIMITED

Article 6
Competitive Trading Arrangement

(1) During the subsistence of the Agreements entered into by the Licensee prior to the enactment of the Act, the Licensee shall have the option to participate in such measures as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement.

(2) Any variation or modification in the Agreements under the foregoing sub-article (1), for allowing the Licensee to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

(3) In the event that the Licensee exercises its option to participate wholly or partially in development of the Competitive Trading Arrangement under the fore-going sub-article (1), the Licensee shall in good faith work towards implementation and operation of the aforesaid Competitive Trading Arrangement in the manner and time period specified by the Authority and in doing so, the Licensee shall not by any act or omission impede the development, implementation or operation of the Competitive Trading Arrangement.

Article 7
Maintenance of Records

For the purpose of sub-rule (1) of Rule 19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

Article 8

Compliance with Performance Standards

Subject to the provisions of Article 2(2), the Licensee shall comply with the relevant rules on performance standards as may be prescribed by the Authority from time to time.

Article 9

Compliance with Environmental Standards

The Licensee shall, to the full satisfaction of the relevant competent authority, comply with the environmental standards as may be prescribed by the aforesaid relevant competent authority from time to time.

Article 10

Provision of Information

Subject to the provisions of Article 2(2), the Licensee shall provide to the Authority all such information as the Authority may require.

Article 11

Revocation and Suspension

(1) In exercising its powers to suspend or revoke the Licence under Section 28 of the Act, the Authority shall issue a show cause notice of a period not less than 30 days.

(2) Pursuant to the powers under Rule 8(4), the obligations of the Licensee under Rule 8(3) stand modified to the extent of inconsistencies with the Agreements and in the event of termination of the Agreements, the Authority may revoke or suspend this Licence.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

Article 12
Approvals and Authorisations

Notwithstanding the provisions of Article 11(2), the Licensee shall apply to the Authority, where required, for approvals and authorizations under the Rules, including without limitation, the approvals and authorisations under Rule 8, Rule 10 and Rule 14.

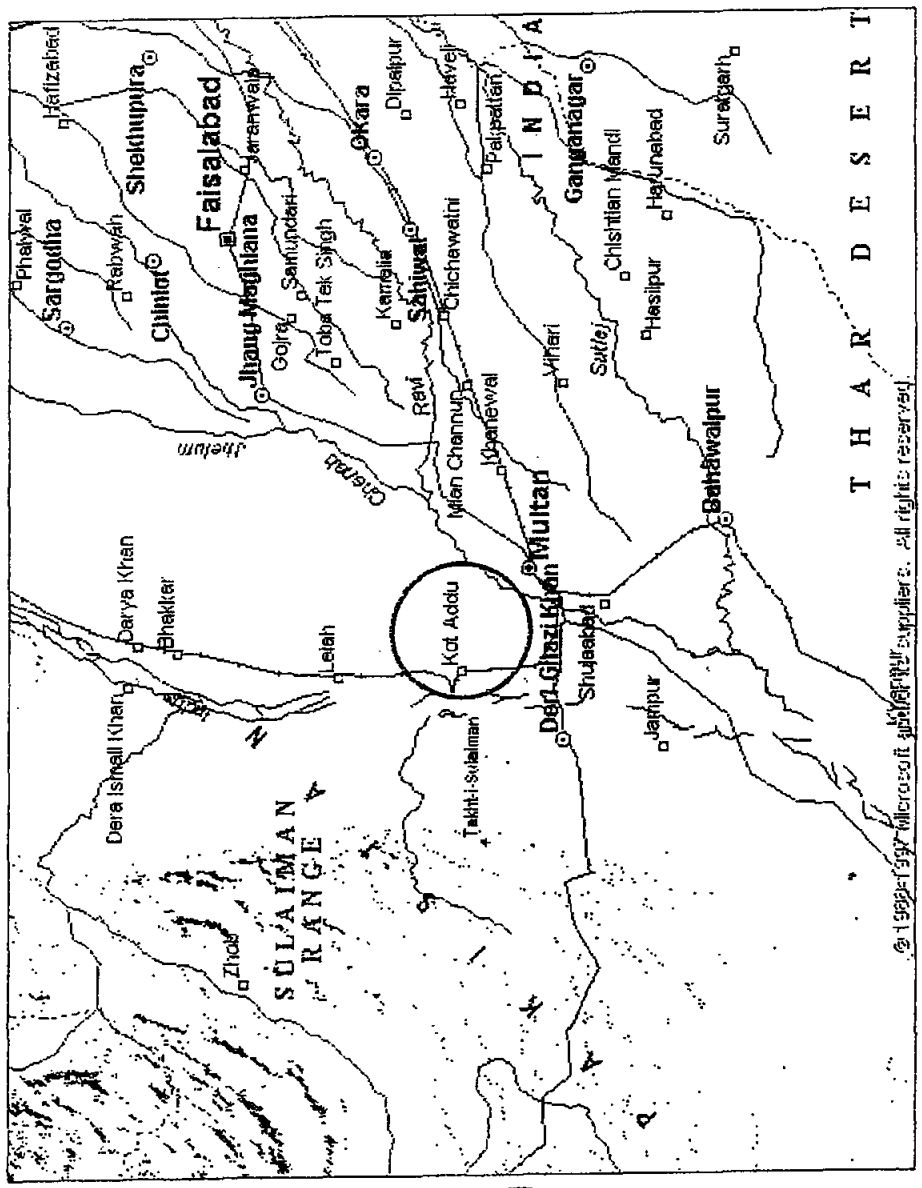
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
(NEPRA)

KOT ADDU POWER COMPANY LIMITED

Schedule-I

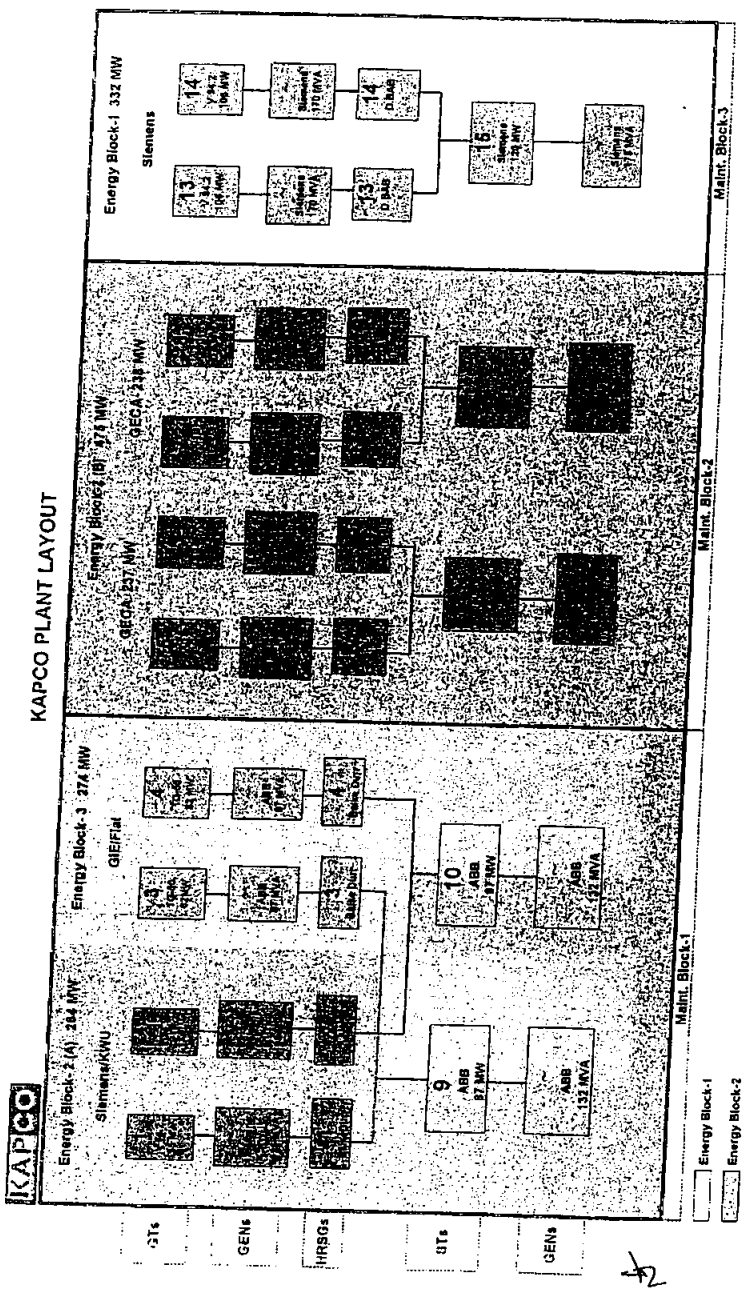
KADDU POWER COMPANY LIMITED

KOT ADDU GAS TURBINE POWER STATION



NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
(NEPRA)

KOT ADDU POWER COMPANY LIMITED



Annexure III

Plant Data Sheet

SN	Unit ID	Technology	Manufacturer	Installed Capacity at 15°C	Derated Capacity (MW) 30°C	Expected Life
1	1	Gas turbine	Siemens	110	95	25 Yrs
2	2	Gas turbine	Siemens	110	95	25 Yrs
3	3	Gas turbine	Fiat	96.08	82	25 Yrs
4	4	Gas turbine	Fiat	96.08	82	25 Yrs
5	5	Gas turbine	Alsthom	94.65	79	25 Yrs
6	6	Gas turbine	Alsthom	94.65	82	25 Yrs
7	7	Gas turbine	Alsthom	94.65	77	25 Yrs
8	8	Gas turbine	Alsthom	94.65	79	25 Yrs
9	9	Steam turbine	ABB	112.1	87	25 Yrs
10	10	Steam turbine	ABB	112.1	97	25 Yrs
11	11	Steam turbine	Alsthom	103.4	76	25 Yrs
12	12	Steam turbine	Alsthom	103.4	82	25 Yrs
13	13	Gas turbine	Siemens	123	106	25 Yrs
14	14	Gas turbine	Siemens	123	106	25 Yrs
15	15	Steam turbine	Siemens	148.6	120	25 Yrs

Fuel	Type	Source	Supplier	Logistics	Supply Means
FO	LSFO	Imported	PSO	Tanks	Pipeline
HSD	HSD	Imported	PSO	Tanks	Pipeline
Gas	Natural Gas	Indigneoius	SNGPL	Continuous Supply	Pipeline

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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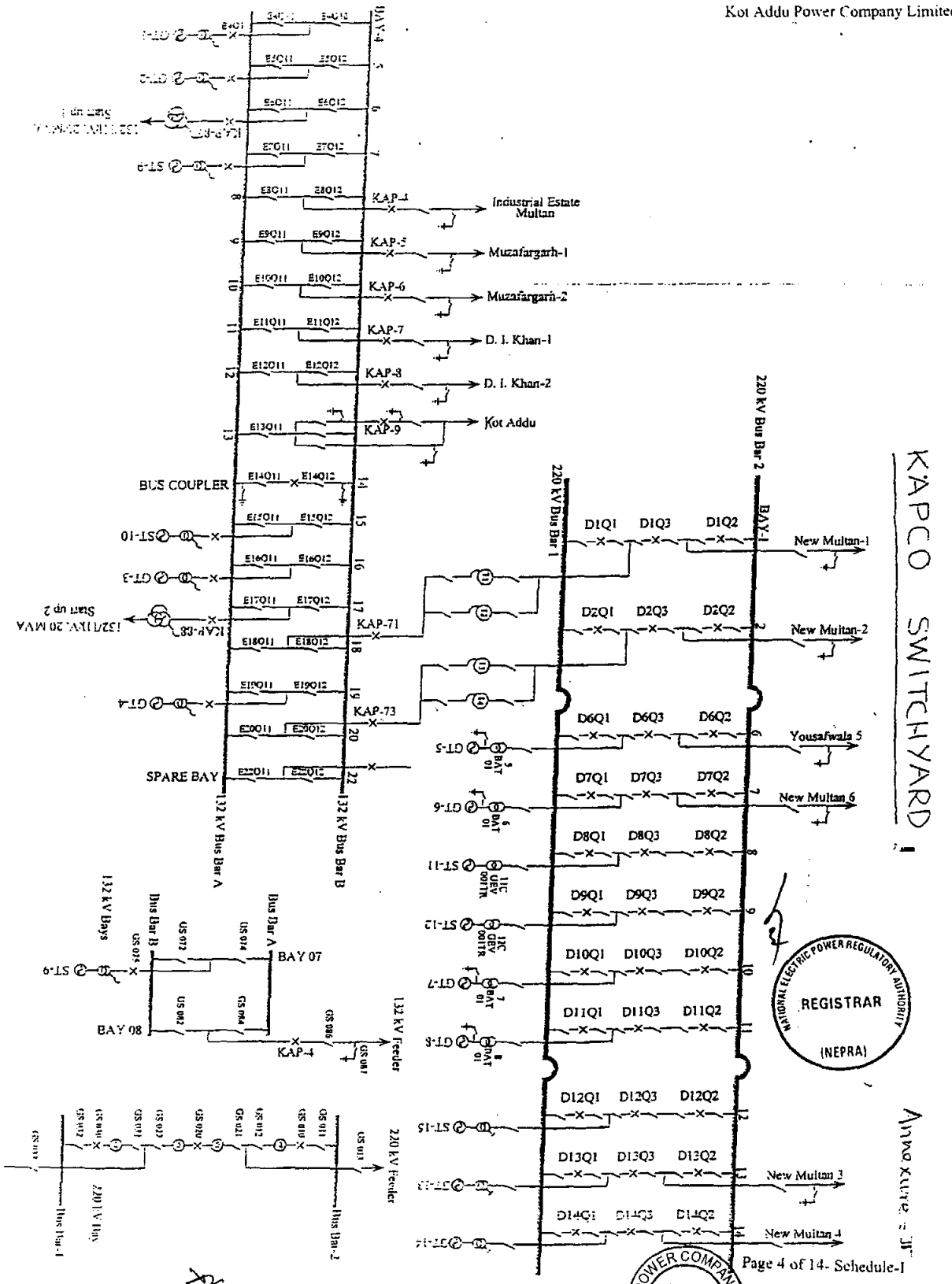
(NEPRA)

KOT ADDU POWER COMPANY LIMITED


KAPCO SWITCHYARD
220 KV Bus Bar 1
220 KV Bus Bar 2
132 KV Bus Bar A
132 KV Bus Bar B
BUS COUPLER
SPARE BAY
KAP-1
Industrial Estate Multan
KAP-5
Muzafargarh-1
KAP-6
Muzafargarh-2
KAP-7
D. I. Khan-1
KAP-8
D. I. Khan-2
KAP-9
Kot Addu
KAP-71
KAP-73
KAP-4
New Multan-1
New Multan-2
Yousafwala 5
New Multan 6
New Multan 3
New Multan 4
BAY 07
BAY 08
132 KV Feeder
220 KV Feeder
REGISTRAR
NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
(NEPRA)
KOT ADDU POWER COMPANY LIMITED

Kot Addu Power Station

Operating Record

Annexure V

Year	Net Power Sold to WAPDA (Mwh)
1996-1997	4873446
1997-1998	5088804
1998-1999	6328244
1999-2000	5368391
2001-2002	641080

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

PLANT CHARATERISTICS

Generation voltage:

Generator Terminal voltage = 11 kV

Step up transmission voltage = 220 kV & 132 kV

Frequency = 50 Hz (As per grid system design and PPA)

Power Factor: As per the system constraints and NPCC instructions

Automatic Generation Control: Yes

Ramping rate: As per the attached "Technical limits sheet"

Auxiliary consumption: 2.5 % of the Gross Generation

Time to synchronise to the grid: As per the "Technical limits sheet" attached. (Annexure VII)

Alternating fuel

GT3&4: Gas / HSD
GT1, 2, 5, 6, 7, 8 , 13, 14 : Gas / HSD / FO

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

TECHNICAL LIMITS SHEET

Annexure VII

3 Start -Up Times for Gas Turbines

UNITS		1-2	3-4	5-8	13-14
GT start to GT Synchronisation	(minutes)	4	28	10	3.3
Ramping Rate	MW / Min	11	5	8	11
Load Range for Ramping Rates		0-86 MW	0-80 MW	0-82 MW	0-107 MW
GT start to GT Base Load	(minutes)	13	44	20	13.0

Start -Up Times for Steam Turbines

UNITS	Module-1 (GT-1, 3 & STG-9) Module-2 (GT-2, 4 & STG-10)			Module-3 (GT-5, 6 & STG-11) Module-4 (GT-7, 8 & STG-12)			Module-5 (GT-13, 14 & STG-15)		
Start	Cold	Warm	Hot	Cold	Warm	Hot	Cold	Warm	Hot
GT Start to STG Synchronisation(minutes) (HRSG preparation + STG rolling)	166 (GT 3&4) 144 (GT 1&2)	88 (GT 3&4) 64 (GT 1&2)	58 (GT 3&4) 34 (GT 1&2)	150	105	65	180	91	74
STG Ramping Rates MW / Min	1.2	1.9	4.8	0.36[1] & 2.35[2]	0.58 [1] & 3.13 [2]	3.28	4	4	4.12
STG Load Range for Ramping Rates	0-95 MW	0-95 MW	0-95 MW	0-35[1] MW & 35-82[2] MW	0-35[1] MW & 35-82[2] MW	0-82 MW	0-118 MW	0-118 MW	0-118 MW
STG Synchronisation to STG Base Load (minutes)	80	50	20	110	75	25	30	30	26
Overall Module timing from first GT start to STG Base Load (minutes)	246 (GT 3&4) 224 (GT 1&2)	138 (GT 3&4) 114 (GT 1&2)	78 (GT 3&4) 54 (GT 1&2)	260	180	90	210	120	103
3 Average Module Ramping Rates During start-up — Full Module	1.1 (GT 3&4) 1.2 (GT 1&2)	1.9 (GT 3&4) 2.3 (GT 1&2)	3.4 (GT 3&4) 4.9 (GT 1&2)	0.8	1.3	2.7	1.5	2.6	3.1
Half Module	0.6 (GT 3&4) 0.8 (GT 1&2)	0.9 (GT 3&4) 1.6 (GT 1&2)	1.9 (GT 3&4) 3.2 (GT 1&2)	0.5	0.7	1.6	0.9	1.6	1.9

Note: The sign (GT 3&4) indicates GT-3 or GT-4 is started initially and (GT 1&2) indicates GT-1 or GT-2 is started initially in the respective modules.
STG -11& 12 have two ramping rates in cold & warm start one from 0-35 MW & other from 35-82 MW as mentioned above.

4 Minimum Stable Loading

Module- 1 & 2 = 170 MW
Module- 3 & 4 = 76 MW
Module- 5 = 148 MW

3.7 Units Loading/Deloading Ramp Rates MW/Minute

Module	Minimum Load to Base Load	Base Load to Minimum Load
1&2	2.8	2.3
3&4	5.2	3.6
5	8.2	7.4

4 Classification of Starts

Units	9-10			11-12			15		
Start type	Hot	Warm	Cold	Hot	Warm (1)&(2)	Cold	Hot	Warm	Cold
Time after Shutdown (Hours)	< 2	2-16	> 16	< 2	(1) 2-8 (2) 8-48	>48	<6	6-40	> 40

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR INEPRA

KOT ADDU POWER COMPANY LIMITED

SCHEDULE 1

SITE DESCRIPTION

The Complex is situated on a site of approximately 350 acres in the Punjab Province. Central Pakistan. approximately 90 kilometers north-west of the town of Multan. and 20 kilometers east of the River Indus. Its name is taken from the local village of Kot Addu. which is approximately 2 kilometers north of the Site. A plan of the Site is attached as Exhibit A to this Schedule 1.

The Complex consists of the Facility (as described below) and the Housing Colony. The Facility consists of ten gas turbine and five steam turbine Units. plus ten heat recovery steam generators ("HRSG's"). comprising five independent combined cycle Modules each consisting of two gas turbine Units. two HRSG's and one steam turbine Unit. and associated ancillary plant. The ancillary plant includes water extraction and treatment systems. cooling towers. oil storage tanks. fuel oil treatment plants. and other equipment. The Complex burns residual fuel oil. high speed diesel and natural gas.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

SCHEDULE 2

TECHNICAL LIMITS

Design Limits

1.1 Start-Ups

(a) The notice required by WAPDA to the Company to initiate start-up of a Unit and synchronize to the Grid System will vary according to the length of time the Unit has been shutdown. Tables 1A and 1B below show the length of notice (in minutes) required for various conditions of start-up for gas and steam Units. The steam turbine start times must be added to the start times of the gas turbines used to provide such turbines with steam.

For purposes of this Section 1.1, c/s shall mean "Cold Start", w/s shall mean "Warm Start", and h/s shall mean "Hot Start".

TABLE 1A
Start-Up Times for Gas Turbines

UNITS	1 — 2	3 — 4	5 — 8	13 — 14
Starting Time (minutes)	4	28	10	3.3

TABLE 1B
Start-Up Times for Steam Turbines

UNITS	9 — 10	11 — 12	15
Starting Time (minutes)	c/s — 140 w/s — 60 h/s — 15	c/s — 20 w/s — 20 h/s — 10	c/s — 42 w/s — 25 h/s — 15

The reference to starts, starting or started means the process of firing the boiler, running up the turbine generator and synchronizing it to the Grid System.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

(b) Start-up of a Steam Turbine Unit shall be classified as set forth in Table 2 below:

TABLE 2			
UNITS	9 — 10	11 — 12	15
Drum Pressure** (bar)	c/s — <12 w/s — 12-20 h/s — >20	N/A	N/A
Steam Temperature**	N/A	c/s — <100°C w/s — 100-250°C h/s — >250°C	N/A
Time after Shutdown	N/A	N/A	c/s - >60 hours w/s - 6-60 hours h/s - <6 hours

** Classification has been provided on the basis of Drum Pressure or Steam Temperature depending on the classification provided by the manufacturer.

(c) The number of yearly steam turbine Unit start-ups shall be subject to the limits set forth in Table 3 below:

TABLE 3			
UNITS	9 — 10	11 — 12	15
Recommended Starts/Year	c/s — 5 w/s — 50 h/s — [**]	c/s — 8 w/s — 80 h/s — 365	No manufacturer limits

** To be agreed by the Engineer, WAPDA and the Purchaser prior to the completion of the ~~IDC Test~~ and the Functional Tests.

1.2 Complex loading

(a) The Unit load ramping rates are steady rates at which the load can be raised. The maximum design load ramping rates are shown below in (MW/minute) in Table 4. The maximum design load ramping rates shown below are subject to the results of the Functional Test described in Section 2.1(f) of Schedule 4.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

TABLE 4

UNITS	1 — 2	3 — 4	5 — 8	9 — 10	11 — 12	13 — 14	15
Ramping Rate	11* 30**	5	8	c/s - 1.5 w/s - 12 h/s - 20	c/s - 2 w/s - 3 h/s - 3	11* 30**	c/s - 14 w/s - 14 h/s - 14
Load Range (%)	20-90	0-100	0-100	0-100	c/s - 35-100 w/s - 35-100 h/s - 5-100	15-100	c/s - 0-50 w/s - 0-65 h/s - 0-80

* Normal
** Fast

(b) The Unit load ranges expressed in percentages in this Schedule refer to the gross load ranges, for which the maximum ramping rates apply. Ramping rates outside of these load ranges will be slower.

(c) Temperature Stabilization

(i) During cold start only, once reaching full speed and no loading, the Unit 15 load will be required to be held steady for twenty-five (25) minutes for temperature stabilization of the turbine during load increases.

(ii) Any required stabilization for Unit 9 and 10 loads will depend on axial/surface stresses controlled by turbomax.

(iii) Subject to turbine conditions the Company may shorten or waive the requirement for one or more of the stabilization periods.

(d) Step changes in Despatched load of up to 5% of each generator are allowable provided that the generator load is greater than 0%. After such step change the new Unit or Module load must be held constant for stabilization purposes in accordance with 1.2 (c) or for a pro-rata period for lesser step changes.

(e) The Units can withstand a full load rejection and remain in a safe condition. Provided the Complex auxiliaries are operated continuously, the Units can be re-synchronized within one hour provided that the reason for the load rejection has been removed.

(f) The Complex minimum continuous loading shall be 1 gas turbine Unit at baseload plus the associated steam turbine Unit.

(g) Base load operation of Units 1 & 2 shall be defined as the load associated with a corrected turbine exhaust temperature of not more than 487°C under

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

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any circumstances. The maximum vanadium content of residual fuel oil permissible at this exhaust temperature is 25 ppm per the manufacturer's vanadium correction curve. Vanadium content levels in the fuel of 25-50 ppm shall require lower turbine exhaust temperatures in accordance with the manufacturer's vanadium correction curve.

1.3 Frequency, Power Factor, Voltage Limits and Droop Settings

(a) The Units within the Complex will operate at 100% load with a power factor in the range 0.85 lagging to 0.97/0.95 leading which range shall not be exceeded. At no time will the generator capability curves be exceeded.

(b) The Units can operate within the range ±10% on the 11 kV high voltage system which range shall not be exceeded, however, the exact voltage is different for each gas turbine Unit.

(c) The Complex can operate within the frequency range 49 Hertz to 51 Hertz, and in limited and exceptional cases from 47.5 Hertz to 52.5 Hertz, which range shall not be exceeded.

(d) The Complex or individual Units will be subject to tripping if frequency and/or voltage fluctuations outside the ranges stated in 1.3(b) and 1.3(c) occur.

(e) The Unit governor droop is adjustable in the 2-10% range.

(f) The automatic voltage regulator droop setting is adjustable in the 0-21% range.

(g) The existing 132 kV and 220 kV transmission lines are anticipated to have sufficient capacity when all 15 Units of the Complex are operating at full load. Two additional 220 kV transmission lines are being installed (scheduled completion mid 1996) in order to increase the transmission line reliability. If there is a transmission limitation before the two additional 220 kV transmission lines are completed, such transmission limitation shall be considered a Technical Limit.

(h) The generator reactive capability range in paragraph (a) above and the voltage regulation range in paragraph (b) above are each subject to change based on the results of the Functional Test described in Sections 2.1(d) and in 2.1(a), respectively.

2. Design Maintenance Limits

The cycle of Scheduled Outages is set out in Tables 5A and 5B below together with recommended durations for such inspections and outages. Time allotted for Scheduled Outages is provided for in Section 6.3 of this Agreement.

Power Purchase Agreement Schedule

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

TABLE 5A
GAS TURBINE MAINTENANCE SCHEDULE AND RECOMMENDED DURATIONS

Equivalent Operating Hours for Inspection	Time Required for Combustion Inspection	Equivalent Operating Hours for HGP Inspection	Time Required for HGP Inspection	Equivalent Operating Hours for overhauling	Time Required for Overhauling
4000 hours	7 days	N.A.	N.A.	24000 hours	50 days
4000 hours	7 days	N.A.	N.A.	24000 hours	50 days
3000 hours	7 days	6000 hours	30 days	18000 hours	50 days
3000 hours	7 days	6000 hours	30 days	18000 hours	50 days
7500 hours	7 days	22500 hours	30 days	45000 hours	50 days
7500 hours	7 days	22500 hours	30 days	45000 hours	50 days
7500 hours	7 days	22500 hours	30 days	45000 hours	50 days
7500 hours	7 days	22500 hours	30 days	45000 hours	50 days
4000 hours	7 days	25000 hours	30 days	50000 hours	50 days
4000 hours	7 days	25000 hours	30 days	50000 hours	50 days

TABLE 5B
STEAM TURBINE MAINTENANCE SCHEDULE AND RECOMMENDED DURATIONS

Unit No.	Running Hours for Minor Overhaul	Time Required for Minor Overhaul	Running Hours for Major Overhaul	Time required for Major Overhaul
9 – 10	25000 hours	20 days	50000 hours	60 days
11 – 12	25000 hours	20 days	50000 hours	60 days
15	25000 hours	20 days	50000 hours	60 days

Scheduled Outages thereafter continue on a three to five (3 to 5) Year cycle which must be maintained. All boiler inspections will be completed within the above timescales.

The scheduling of maintenance inspections will be compatible with regulatory requirements. All regulatory inspections will be carried out during Scheduled Outages.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

SCHEDULE 3

INTERCONNECTION FACILITIES AND TRANSMISSION FACILITIES

(a) The Complex will include the 132 kV and 220 kV switchyards. The switchyards shall be owned, operated and maintained by the Company.

The WAPDA transmission lines connected to the Complex consist of 132 kV and 220 kV feeders which serve the local regions around Kot Addu, Muzaffar Garh, DI Khan and Multan (see Figures 1 and 2). Six 132 kV feeders and four (soon to be six) 220 kV feeders are connected to 132 kV and 220 kV bus bars to be owned by the Company and shown on the single line diagram of the substation in Figure 3. The boundary of ownership and responsibility between the Company and WAPDA will be at the terminal line gantry on the dead-end towers and will be called the "Interconnection Point." The Company shall maintain for WAPDA an earth connection from the earthing system of the Complex. WAPDA shall maintain the Metering System, including import and export meters, which together with the transmission lines referred to above within the Site boundary will comprise the "Interconnection Facilities." The Metering System and transmission lines shall remain the property of WAPDA and shall be owned and maintained by WAPDA.

(b) Protection. A carrier interrripping circuit for each transmission line has been provided between the line circuit breakers at the Complex.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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KOT ADDU POWER COMPANY LIMITED

Schedule-II

KOTADDU POWER COMPANY LIMITED

INSTALLED CAPACITY (GROSS) & NET CAPACITY

Installed ISO (Gross) Capacity	1600 MW
Net Capacity	1345 MW

Note: Net Capacity – These are indicative figures only as provided by the Licensee. The net capacity available to NTDC for dispatch and other purchasers will be determined through procedures contained in the Agreements or the Grid Code.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY REGISTRAR (NEPRA)

KOT ADDU POWER COMPANY LIMITED

DETERMINATION FOR GRANT OF GENERATION LICENCE

TO

Kot Addu Power Company Limited

and

Altern Energy Limited

1. Pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997), (hereinafter referred to as the 'Act'), no person shall construct, own, or operate a generation facility without a licence issued by the Authority under the Act. Accordingly, Kot Addu Power Company Limited (hereinafter referred to as 'KAPCO') and Altern Energy Limited (hereinafter referred to as 'AEL') which, entered into contracts backed by sovereign guarantees prior to the commencement of the Act, are therefore required to obtain individual licences from the Authority for operating their generation facilities.

2. KAPCO and AEL applied for generation licences on 17-06-2002 and 14-05-2003 respectively. However, the applications could not be processed because complete information required under the Application and Modification Procedure Regulations, 1999 was not provided. The Authority admitted the application of KAPCO on 19-02-2004 and AEL on 11-03-2004 after obtaining all requisite information from them.

3. A draft generation licence, similar to the one granted to other IPPs in August 2003 was circulated amongst the two applicants and all other stakeholders. The Authority solicited comments on the draft generation

KOT ADDU POWER COMPANY LIMITED

licence. Comments were received in writing on the said draft. A Hearing was conducted on 18.05.2004, in order to provide an opportunity to the applicants and other stakeholders to assist the Authority in arriving at an informed decision.

4. During the Hearing the Authority discussed inter alia issues relating to the compliance of applicable environmental standards by the applicants, the term of their individual licences and the application of rules as amended from time to time to the Licensees. For KAPCO, shareholding structure of the Company was also discussed in the context of 64% ownership by WAPDA (Hydel). The Authority decided that this question of shareholding by WAPDA (Hydel) would be dealt with in detail when discussing the case of Generation Licence to WAPDA (Hydel). The Authority also decided that this question should not hold up the grant of Generation Licence to KAPCO.

5. Earlier the Authority has granted generation licences to 12 other IPPs vide its determination dated 26 August 2003 (hereinafter referred to as the 'determination'). KAPCO and AEL did not raise any objection to the draft generation licence. KAPCO however pointed out that it did not have an Implementation Agreement as defined in the Draft Generation Licence. A similar Agreement between KAPCO and the President of Pakistan is

KOT ADDU POWER COMPANY LIMITED

called Facilitation Agreement. KAPCO requested NEPRA to modify draft generation licence accordingly.

KAPCO request has been accepted by the Authority and necessary modifications have been made in Article 1 sub-clauses 1(b) and 1(d) of Final Generation Licence to KAPCO.

6. In view of the above, the Authority hereby grants generation licences to KAPCO and AEL for reasons stated in the determination dated 26 August 2003, in terms and conditions as per licences attached to this determination, Annexure 1 and Annexure 2 in respect of KAPCO and AEL respectively.

Fazlullah Qureshi
Member

Mansoor Elahi
Member

Abdul Rahim Khan
Vice Chairman

Lt. Gen (R) Saeed uz Zafar, HI (M)
Chairman

KOT ADDU POWER COMPANY LIMITED

ANNEXURE S

COPY OF RENEWED GENERATION LICENSE

National Electric Power Regulatory Authority
Islamic Republic of Pakistan

Registrar

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad
Ph: +92-51-9206500, Fax: +92-51-2600026
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

F/F

No. NEPRA/R/LAG-18/7064-71

September 08, 2022

Mr. Aftab Mahmood Butt
Chief Executive
Kot Addu Power Company Limited
5 B/3, Gulberg-III, Lahore

Subject: **Renewal of Generation Licence No. IPGL/020/2004**
Licence Application No. LAG-18
Kot Addu Power Company Limited (KAPCO)

Reference: *KAPCO letter No. KAPCO/CEO/2021/423 dated 24.06.2021*

It is intimated that the Authority has approved renewal in Generation Licence No. IPGL/020/2004 dated September 22, 2004 in respect of Kot Addu Power Company Limited (KAPCO) pursuant to Section 26 of the NEPRA Act read with Rule-5(2) of the NEPRA Licensing (Generation) Rules, 2000.

2. Enclosed please find herewith determination of the Authority in the matter of Renewal of Generation Licence No. IPGL/020/2004 dated September 22, 2004 granted to KAPCO.

Enclosure: As Above

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

08 09 22

(Syed Safeer Hussain)

Copy to:

1. Secretary, Power Division, Ministry of Energy, 'A' Block, Pak Secretariat, Islamabad
2. Managing Director, Private Power & Infrastructure Board (PPIB), Ground & 2nd Floors, Emigration Tower, Plot No. 10, Mauve Area, Sector G-8/1, Islamabad
3. Managing Director, NTDC, 414 WAPDA House, Lahore
4. Chief Executive Officer, CPPA(G), 73 East, A.K. Fazl-ul-Haq Road, Blue Area, Islamabad
5. General Manager, National Power Control Centre (NPCC – NTDC), Faiz Ahmed Faiz Road, H-8/1, Islamabad
6. Chief Executive Officer, Multan Electric Power Company, MEPCO Headquarters, Khanewal Road, Multan
7. Director General, Environmental Protection Department, Government of the Punjab, National Hockey Stadium, Ferozpur Road, Lahore

KOT ADDU POWER COMPANY LIMITED

National Electric Power Regulatory Authority (NEPRA)

Islamabad – Pakistan

GENERATION LICENCE

IPGL/020/2004

In exercise of the powers conferred under Section-26 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, as amended or replaced from time to time read with Rule-5(2) of the NEPRA Licensing (Generation) Rules, 2000, the Authority hereby renews the Generation Licence [No. IPGL/020/2004 dated September 22, 2004] granted to KOT ADDU POWER COMPANY LIMITED to the extent mentioned as here under:-

(a). The expiry date mentioned in **Face Sheet** of the original **Generation Licence** has been changed from **September 21, 2021** to **September 21, 2024**; and

(b). The **Term** of Licence mentioned in **Article-4** of the original Generation Licence may be considered as **twenty (20) years**;

(c). In **Article-5** of the Generation Licence, **NEPRA (Fee) Rules, 2002** may be replaced with **NEPRA (Fees) Regulations, 2021;**

This **Renewal/Extension** in Generation Licence is given under my hand on 8th **day** of **September Two Thousand** & **Twenty Two**

08 09 22

Registrar

KOT ADDU POWER COMPANY LIMITED

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY * NEPRA * REGISTRAR

National Electric Power Regulatory Authority (NEPRA)

Determination of the Authority in the Matter of Application of Kot Addu Power Company Limited for Renewal of its Generation Licence

September 8 , 2022
Case No. LAG-20

(A). Background

(i). The Authority in terms of Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") granted a Generation Licence (No. IPGL/020/2004 dated September 22, 2004) to Kot Addu Power Company Limited (KAPCO)/the "Licensee" for its 1600.00 MW multi-fuel [natural gas, Low Sulphur Furnace Oil (LSFO) and High Speed Diesel (HSD)] based generation facility/combined cycle thermal power plant.

(ii). According to the above generation licence, the generation facility/thermal power plant consist of ten (10) gas turbines, five (05) steam turbines and ten (10) Heat Recovery Steam Generators (HRSG). The generation facility is located at approximately 90 km north-west of Multan, Muzaffargarh, in the province of Punjab. The generation licence was granted for a term of seventeen (17) years from the date of its issuance i.e. September 22, 2004.

(B). Filing of Application

(i). KAPCO in accordance with Regulation-13 of the NEPRA Licensing (Application, Modification, Extension and Cancellation) Procedure Regulations, 2021 (the "Licensing Regulations"), submitted an application for renewal in term of its generation licence on June 24, 2021.

(ii). Regarding the proposed time period of renewal, KAPCO has informed that its existing Generation Licence had a term of seventeen (17) years which will expire on September 21, 2021. Therefore, it has requested to renew the term of licence for another ten (10) years.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY ★ NEPRA ★ REGISTRAR

KOT ADDU POWER COMPANY LIMITED

(iii). About "statement of the reason in support of extension/renewal", KAPCO submitted that it is generating around 6,427 GWh of energy per annum and has successfully met its obligations for twenty five (25) years under the Power Purchase Agreement (PPA) for supplying power to national grid. Now, the Licensee has requested to renew its generation licence due to the reasons that: (a). it will ensure that PPA is further extended after completion of its 25th Agreement year for 485 days under Other Force Majeure Event (OFME) settlement as agreed in third Amendment of PPA; (b). generating units have sufficient remaining useful life as explained in "KAPCO Plant Remaining Useful Life Assessment (RULA) Study" conducted by Ramboll Energy.

(iv). Further to the above, KAPCO has stated that operation of its generation facility is critical as power is supplied to grid stations of Multan Electric Power Company Limited (MEPCO) and National Transmission and Despatch Company Limited (NTDC). It is worth mentioning that the said facility operates as base load power plant especially during peak summer season.

(C). Processing of Application

(i). After completion of all the required information as stipulated under the Regulation-13(1) of the Licensing Regulations by KAPCO, the Authority considered it appropriate to publish the notice in the press for information and comments of general public. Accordingly, the public notice was published on July 07, 2021 in one (01) English and one (01) Urdu newspaper to inform the general public, interested/affected parties, and different stakeholders about the proposed renewal in term of generation licence.

(ii). Apart from the above, separate letters were also sent to government ministries, their attached departments and representative organizations etc. on July 09, 2021. Through the said letters, the stakeholders were informed about the proposed renewal and publication of notice in the press. Further, the said entities were invited for submitting their views and comments in the matter for assisting the Authority.

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(D). Comments of Stakeholders

(i). In response to the above, the Authority received comments from eight (08) stakeholders. These included Pakistan State Oil (PSO), Central Power Purchasing Agency (Guarantee) Limited (CPPA-G), Saqlain & Husnain Advocates and Corporate Counsels (S&H), Water and Power Development Authority (WAPDA), Ministry of Planning, Development and Special Initiatives (MoPD&SI), MEPCO, NTDC and Petroleum Division of Ministry of Energy (PtDMoE). The salient points of the comments offered by the said stakeholders are summarized in the following paragraphs:

(a). PSO submitted that it has had a longstanding business relationship with KAPCO and has been making fuel oil supplies to their Complex. Therefore, it has no specific comments on the proposed extension in term of licence with understanding that the Authority will process the application as per its mandate;

(b). CPPA-G stated that pursuant to the terms and conditions of the PPA between KAPCO and CPPA-G, the term of PPA is extended due to OFME. Accordingly, the term of the PPA which was scheduled to expire on June 26, 2021 has now been extended due to OFME events by 485 days i.e. up to October 24, 2022. In consideration of the said, the generation licence of KAPCO which is due to expire in September 2021 is required to be extended at least up to October 24, 2022 to enable KAPCO to generate electricity as per the PPA. In view of the said, CPPA-G recommended that the generation license of KAPCO may be extended at least up to October 24, 2022, that period may further be extended due to OFME during this extended period, if any;

(c). S&H submitted that under Section-26 of the NEPRA Act, the Authority is empowered to amend or vary the conditions of licence if it is in public interest. For this purpose, it is imperative that Authority should advise KAPCO to submit to NEPRA for review all five (05) of the Principal Agreements dated June 27, 1996. These Agreements include: (a). Facilitation Agreement and Government of Pakistan (GoP) Guarantee; (b). Transfer Agreement between

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the Licensee and WAPDA; (c). PPA with the Power Purchaser; (d). Oil Supply Agreement between the Licensee and PSO; and (e). Gas Supply Agreement (GSA) between the Licensee and SNGPL. Moreover, since Principal Agreements were executed prior to enactment of NEPRA Act 1997, therefore, KAPCO had a vested right to operate the power plants without seeking approval of tariff from the Authority under Section-31 of the NEPRA Act. However, after completion of term of these agreements the Authority has an obligation to review the Principal Agreements and extend the same after ensuring public interest. In case of revisiting the tariff after expiry of the term of the licence and PPA, the Authority is empowered to determine the same under Section-7 read with Section-31 of the NEPRA Act. In this regard, the Authority is requested to consider the efficiency of the generation facilities and O&M costs among other components for allowing the extension in generation licence;

(d). Further to the above, S&H submitted that after completion of the twenty five (25) years of PPA, the power plant is now subject to provisions of the NEPRA Act as well as Policy of the Federal Government. Clause 4.1 of the PPA deals with renewal of the PPA which also mandates the Authority to review the terms and conditions of renewal considering the same has to be finalized through good faith negotiations between the Power Purchaser and KAPCO. The power consumers have already paid for the costs of power plant except to the extent of equity of shareholders of KAPCO, being a Build Own Operate (BOO) based generation facility. Therefore, the Authority may also seek specific comments of the Federal Government and CPPA-G on technical and tariff related aspects of the extension application before making a final decision regarding extension of PPA. S&H also referred to Regulation-13(2) of the Licensing Regulations which provides grounds for extension of generation licence. In view of the above, S&H requested the Authority to decide the application in best public interest and after considering the above assertions and current crisis of the power sector especially the circular debt and

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generation capacity commitments of the Government. The Authority must be cognizant of the fact that KAPCO is one of the best IPPs of Pakistan;

(e). WAPDA submitted that 1600 MW Combined Cycle Gas Turbine (CCGT) based Power Plant of KAPCO was built by it and the said company is listed on the Pakistan Stock Exchange with around 56,000 shareholders. WAPDA is a public sector entity holding a shareholding of around 40.25 % and 5% by BESOS. During almost last three decades, KAPCO has a proven track record of contribution to the National Grid being operated and maintained at the highest international standards which will enable its reliable continuance for another decade. WAPDA considers KAPCO as strategic national asset that paid Rs 63.74 billion as dividend to WAPDA (public sector) since its inception. It is a Quality, Environment, and Safety conscious company with well-established Policy Guidelines and Procedures under the umbrella of the Integrated Management System "IMS" having certificates of ISO 9001, 14001, and 45001. The Complex complies with National Environmental Standards "NEQs" and Provincial Environmental Standards "PMQs". KAPCO being a responsible corporate entity, believes in serving the local community through Corporate Social Responsibility (CSR) projects which includes donations to Education and Health sector, support for victims of national disasters like earthquake, 2005 & devastating Flood of 2010. Further, KAPCO set up annual medical camp and tree plantations are done regularly. The PPA has been extended following settlement of Liquidated Damages (LDs) arbitration with CPPA-G/Power Purchaser. KAPCO has a highly skilled workforce with permanent employees around 500. The officers have an average experience of ten (10) years; and average staff experience of over twenty-eight (28) years;

(f). In addition to the above, WAPDA stated that power plant of KAPCO is being operated and maintained with state-of-the-art, proven technology of CCGT. It has an annual Dependable

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Capacity of 1345 MW at reference site conditions. The total area of Complex is spread over 385 acres out of which Power Complex covers 174 acres; and the remaining area constitutes a residential colony and other incidental amenities. KAPCO also consumes LSFO produced by Attock Refineries Limited (ARL). This not only provides backup fuel in case of gas shortage, but also ensures continuation of ARL operations. It has a key location to the National Grid with 12 Transmission Lines, six each on 132 KV and 220 KV interconnected through having a transformation capacity of 500 MVA. The Complex has maintained Black Start capability to support quick recovery in case of transmission collapse. The capability has been demonstrated successfully over the years and in the recent blackouts. The Power Complex has one of the most extensive fuel oil storage facilities in Pakistan of 156,000 Metric Tons of LSFO and 40 million liters of HSD. KAPCO obtains insurance coverage for its Power Complex, however, there have been negligible insurance losses. KAPCO being strategic asset of WAPDA, its location along with contribution to National Grid in MEPCO region, utilization of fuel oil & gas pipeline infrastructure and 10 years of Remaining Useful Life Assessment, WAPDA has strongly recommended the extension in term of generation licence for another 10 years;

(g). MoPD&SI communicated that it does not support the expensive power generation based on RFO to ensure affordable supply of electricity in the future. Further, the extension in term of generation facility will lead to amendment in draft Indicative Generation Capacity Expansion Plan (IGCEP 2021-30) as NTDC has planned retirement of the subject facility by 2023 in the said document;

(h). MEPCO highlighted some facts about KAPCO which include: (i). KAPCO Power House is a primary source of fifteen (15) Grid Stations owned by MEPCO, 01 No. consumer Grid Station with total installed capacity 822.5 MVA & 01 No. Grid Station of FESCO comprising of far flung area of Kot Addu, Layyah, Chowk Munda, Chowk Azam, Rang Pur, Kot Sultan, Noor Ahmad Wali, Shadan

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Lund and Tounsa Sharif; (ii). alternate source of above Grid Station is TPS Muzaffargarh & 220 KV Muzaffargarh. TPS Muzaffargarh is already abandoned and 220 KV Muzaffargarh is also overloaded. Low voltage problem may also aggravate in case of feeding from alternate source specially in summer peak; and (iii). even in present scenario MEPCO faces low voltage problem on the tail end Grid Stations connected with KAPCO Power House especially in peak season of summer, for which KAPCO be advised to supply rated voltage at MEPCO Grid stations. Therefore, MEPCO submitted that the above ground realities may be kept in view and the Authority may decide as per relevant rules & regulations;

(i). NTDC submitted that the scope of National Power Control Centre (NPCC) under its ambit is economic dispatch and system operation in safe, stable and reliable manner as well as operational planning of up to one year. Since long term generation and transmission planning is carried out by Power System Planning, therefore the impact of generation license renewal/PPA extension of KAPCO on overall demand-supply position has already been taken into consideration in IGCEP. Being System Operator, NPCC highlighted some issues that will be faced from network operation point of view, in case generation of KAPCO becomes unavailable in existing network. KAPCO consists of 10 GTs & 5 STG, having total Capacity of 1345 MW and is considered economical and efficient power plant (Quick start stop plant) as compared to Muzaffargarh, Lalpir & PakGen power plant in the same area. KAPCO Power House is located at critical location and serving as a major feeding source for MEPCO, FESCO & PESCO areas. During summer peak season, KAPCO supports overloading of 500/220 kV transformers of New Multan Grid Station. Besides the active power provision, it is also a major reactive power source helping in maintaining the voltage profile of the area. It has 500 MVA transformation capacity from 220kV to 132 KV in addition to 540 MW generation on 132 KV side, through which approximately 800 MW power is being dispersed to

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MEPCO, FESCO & PESCO especially in summer season through 132 kV network. It is multi fuel power plant and can be operated on Gas, LSFO, HSD thus having operational flexibility for System Operator. It has Black start facility which is helpful in system restoration during major or partial system disturbances. KAPCO power house is interlinked with NTDC Network and Muzaffargarh power house through six (06) 220 kV transmission lines providing safe power evacuation of its own and adjacent power houses (Muzaffargarh, Lalpir & Pakgen) to the load center. Foregoing in view, NTDC is of the view that request of KAPCO be considered together with the recommendation of Power System Planning in IGCEP and NTDC Transmission Expansion Plan; and

(j). PtDMoE commented that the matter was taken up with Sui Northern Gas Pipelines Limited (SNGPL) who has apprised that initially, it had executed GSA with KAPCO on June 27, 1996 for supply of 70 MMCFD (guaranteed delivery) of indigenous gas. The guaranteed delivery expired on December 31, 2002 while the GSA is valid purely on 'As & When' available basis till expiry of the term of initial GSA. In view of unavailability of indigenous gas, SNGPL has been supplying RLNG to KAPCO since April 2015 purely on 'As & When' basis under interim RLNG Supply Agreement executed from time & time. A tripartite RLNG Interim Supply Agreement has been executed amongst KAPCO, SNGPL & CPPA-G on April 05, 2021 for supply of 200 MMCFD RLNG to KAPCO on 'As & When' available basis. In view of the said, SNGPL has no objection for extension in term of licence of KAPCO.

(ii). The Authority examined above comments of S&H and MoPD&SI and considered it appropriate seeking perspective of the licensee/KAPCO on the same. On the comments of MOPD&SI, it was submitted that KAPCO has a capability of running power plant on Gas, FO (Furnace Oil) and HSD. The primary or preferred fuel for the operation of KAPCO GTs is gas with flexibility of operating 8 GTs on FO from the total of 10 GTs. It is the only company in Pakistan and perhaps one of the very few companies in the world which have successfully demonstrated this capability.

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KAPCO further highlighted its role in supporting the Power Purchaser and GoP during the recent gas crisis. Due to the flexibility, it generated and supplied much needed energy to the country on FO and shifted to gas when it was made available. Unfortunately, the other gas-based units were mostly unavailable due to the non-availability of the gas or could not run on even HSD for a period of time. Had it not have the flexibility to generate on FO successfully, the country would have plunged into a very serious crisis. KAPCO's first preference is to consume the indigenous LSFO produced by ARL and has been a significant consumer of its product for the last two decades. With reference to the IGCEP, KAPCO showed apprehensions that the said document did not properly consider the potential short/long term disruptions in RLNG/Gas supplies to power sector and grid constraints in the area as well as Transmission System Expansion Plan, which requires a very thoughtful review in the best interests of the country. KAPCO referred to the letter of GM System (Operations), NTDC wherein some points were highlighted by system operator which determines the significance of operation of power plant of KAPCO as explained above. It also mentioned the comments of MEPCO which are in favor of the proposed renewal.

(iii). Further to the above, KAPCO submitted that the Authority may appreciate its contribution towards the National Grid as its Power Complex continues to meet requirements of the System Operator (NPCC) considering the facts that: (a). Plant utilization at 67.1% in the month of June 2021; (b). Maximum Load sharing of 1,422 MW at 06:00 on June 28th, 2021; (c). Plant utilization remained at 83.9% during July 2021; (d). Reliable support during Dry-docking of LNG terminal by operating the Complex; (e). round the clock on LSFO due to restricted RLNG supplies. KAPCO is of the view that its power plant is needed in the system not only for sustainable supply but also for the fuel related contingencies. Its project loans have already been paid off and has strong history of supporting the System/GoP not only on account of power generation but also financially.

(iv). Regarding comments of S&H, the Licensee agreed to submit aforementioned Agreements, if so required, at the time of filing of tariff petition before the Authority for review, after expiry of current PPA whereas, the current application pertains to renewal of generation licence. The sale and purchase of electricity, after expiry of current PPA, will depend on tariff determination by the Authority and GoP Policy framework. In respect of the Term of the PPA of twenty-five years, it may be noted that the 'Expiry Date' of the PPA has been extended by 485 days as part of

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settlement of disputes between the Company and the Power Purchaser. Accordingly, the new expiry date will be October 24, 2022 instead of June 27, 2021 (Third Amendment to PPA dated February 11, 2021). As part of the settlement under the Third Amendment of the PPA, KAPCO has agreed, subject to the terms of the Third Amendment to the PPA, to a tariff discount of 11% on the escalable component of CPP and VoM component of EPP. Further, indexation of 50% of reduced escalable component has been capped at PKR/USD parity of 168. Further, the discussions with the Power Purchaser on the renewal of the PPA commenced in terms of the provisions of the PPA. Unfortunately, due to COVID-19 and other related issues progress has been somewhat delayed. KAPCO is cognizant of the requirement to file a tariff petition before the Authority for tariff determination as per relevant tariff rules with comparative schedule of charges, costs, units, price and other items comprising the existing tariff and proposed tariff considering the efficiency and capacity of generation facility. It has successfully maintained both thermal efficiency and output during the 25 years of PPA. M/s Ramboll has assessed the useful life of generating units for at least ten years.

(v). It was reiterated that KAPCO is a legally compliant entity which carries out its operations within the ambit of the legal and regulatory regime. It has over the years proved its utilization in the public interest by continuing to operate under difficult circumstances and providing the much-needed power supply to the MEPCO Region in particular. Despite having completed twenty-five years of its PPA term, KAPCO Power Plant is even now being dispatched at very high levels. In the current summer season, KAPCO has supported the system through its flexibility of fuel and its financial capacity. Its privatization is a successful story of public-private partnership. KAPCO maintained and demonstrated performance, efficiency and reliability throughout its contract period which was, unfortunately, not possible for similar types of power plants owned by the public sector. KAPCO's success is no coincidence; it is due to the execution / implementation of various programmes and plans in a consorted manner for the betterment of its operations and maintenance regime. Further, KAPCO has a team of dedicated professionals who operate and maintain its Power Plant to the highest international standards in accordance with Original Equipment Manufacturers (OEMs) recommendations and best utility practices. KAPCO's skilled manpower is not only sought after by other IPPs in Pakistan but also in the Middle East Region. Year on year, KAPCO's Power Plant has successfully completed its Annual Dependable Capacity (ADC) tests over the requisite benchmark parameters. In July 2021, the ADC

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tests once again demonstrated its reliability and credibility by generating 14 MW excess capacity. In view of the above, the licensee requested the Authority to extend the term of generation licence for at-least 10 years in the best interest of the system and country.

(E). Framing of Issues

(i). The Authority considered the comments of the stakeholders, replies of the Licensee and observed that PPA of KAPCO was unilaterally extended without its approval. Accordingly, the Authority decided to deliberate the matter further by holding a public hearing in terms of Rule-3 of the NEPRA Licensing (Generation) Rules, 2000 (the "Generation Rules"). In this regard, following issues were framed:

(a). Why the parties have agreed to an extension/amendment in Power Purchase Agreement (PPA) for 485 days and what were the circumstances which have led to the same? Elaborate in detail covering all the events.

(b). Why did KAPCO and CPPA-G not approach the Authority for making amendment in the PPA?

(c). Whether CPPA-G was required to report certain event declared as 'Forced Majeure' to the Authority or not? And if CPPA-G was required to report it, whether the same was reported to the Authority?

(d). Why the PPA was amended without approval of extension in generation licence?

(e). Is extension in the generation licence justified considering the average Utilization Factor of around 47% for the last four years?

(f). The NEPRA Act envisages cessation of generation licences by 2023. Will it be legally tenable/prudent extending the term beyond the said period?

(g). What are the financial implications of the amendment in the PPA signed between KAPCO and CPPA-G regarding extension of its term by 485 days?

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(ii). In order to encourage the participation of the general public, interested/affected parties and other stakeholders, notices were published in two (02) different newspapers including the Dawn (English) and daily Express (Urdu) on March 11, 2022.

(iii). Apart from the above, separate letters were also sent to relevant Govt. ministries, their attached departments, representative organizations and individual experts etc. informing them about the date, time and venue of the proposed public hearing.

(F). Public Hearing

(i). The public hearing in the matter was held on March 31, 2022 at NEPRA Headquarter, Islamabad which was attended by various stakeholders including CPPA-G, WAPDA, KAPCO and other participants.

(ii). The management of KAPCO gave a detailed presentation on the "Issues of Hearing" and elaborated its point of view on the same. In the said hearing, KAPCO explained the events which led to extension/amendment in Power Purchase Agreement (PPA) for 485 days. It was submitted that from 2006 onwards CPPA-G did not make timely payments considering the circular debt issues due to which working capital lines of KAPCO started exhausting and banks were reluctant to enhance the said limits. Consequently, the company could not make payment to PSO under the terms of its Fuel Supply Agreement (FSA) to procure fuel which in return limited the supply of oil. Therefore, KAPCO could not generate electric power due to non-availability of fuel and the Power Purchaser/CPPA-G treated this non-availability as 'Forced Outages' under the PPA and raised the Liquidated Damages (LDs) invoices during the period 2009 to 2016. The total receivable from the Power Purchaser surpassed Rs. 130 billion (with overdue of over Rs. 110 billion) which was not envisaged under the PPA. KAPCO also highlighted that the receivables exceeded many times the credit days allowed under the PPA.

(iii). In view of the above, KAPCO approached International Chamber of Commerce (ICC) against the Power Purchaser for arbitration proceedings on imposition of LDs. Meanwhile, Government of Pakistan (GoP) had constituted a Negotiation Committee on June 03, 2020 to negotiate with IPPs for, *inter alia*, tariff reduction. KAPCO, like other IPPs, were requested to enter into negotiations with

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the Government Negotiation Committee, which resulted in signing of the Memorandum of Understanding dated August 19, 2020 which stated that GoP and the Power Purchaser would work towards resolution of the LDs arbitration dispute. Following detailed negotiations in the presence of GoP's appointed Implementation Committee, the Master Agreement and the Third Amendment to the PPA ("Third PPA Amendment") were signed between KAPCO and WAPDA on February 11, 2021, after being duly approved by the Cabinet Committee on Energy (CCoE). Further, KAPCO signed a "Novation Agreement" on February 15, 2021 to transfer the rights, obligations and liabilities of WAPDA under the PPA (as amended by the Third PPA Amendment) in favor of CPPA-G being the Market Operator/Power Purchaser.

(iv). KAPCO further submitted that under the settlement terms of the Third PPA Amendment, it was agreed that the disputed outage period (financial years 2009 to 2016) due to fuel shortage will be treated as 'Other Force Majeure Event ("OFME")' under the PPA as stipulated in Article 13.1(c) of the PPA and the total number of days on account of OFME will be 485 days. As part of the settlement terms, KAPCO and the Power Purchaser agreed that: (a). the Power Purchaser will irrevocably forego and waive all of its liquidated damages and interest disputed by KAPCO in totality; (b). KAPCO will not charge the Power Purchaser any Capacity Payments for making its complex available for dispatch for an extended period of 485 days; (c). KAPCO will forego its claim of late payment interest (approx. Rs. 41.1 billion as of Dec-2020) on late payment interest; (d). Both parties would jointly approach the Arbitration Tribunal of ICC to submit settlement agreement with a request to close the case as per the agreed terms.

(v). Regarding the issue of not approaching the Authority for making amendment in the PPA, it was submitted that KAPCO was privatized in 1996 through International Competitive Bidding and its PPA was signed on June 26, 1996. The tariff, terms and conditions of PPA were also agreed by GoP (through Privatization Commission), which were primarily in line with the 1994 Power Policy and no IPP under the said Policy has obtained approval of the Authority for reduction in tariff as have been agreed between KAPCO and the CPPA-G. Further, CPPA-G had a uniform treatment with all IPPs regarding extension/amendment in PPA which were signed before establishment of NEPRA. KAPCO is of the view that there is no compulsory requirement to approach NEPRA before amending the PPA. The said

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amendment is made under the provisions of the existing PPA, which provides a separate mechanism to amend PPA and states no requirement of seeking approval from NEPRA.

(vi). On amendment in PPA without approval of renewal in generation licence, KAPCO submitted that the term of the PPA was extended as per the provisions of the PPA due to invoking 'Other Force Majeure Event', and not as a separate amendment by the parties. Further, as per applicable legal framework there is no nexus between the amendment of the term of the PPA and the requirement for applying for renewal of the term of the generation licence. KAPCO highlighted that it duly complied with the relevant provisions of Regulation-13 of the NEPRA Licensing (Application, Modification, Extension and Cancellation Procedure) Regulations, 2021 by submitting its extension/renewal application dated June 24, 2021 which is 90 days prior to the expiry of its generation licence.

(vii). Regarding less utilization factor, KAPCO contested that it is contributing to National Grid by providing energy security with multi-fuel fired gas turbines and its operation is vital for stability of the system. It has significant role in supplying power to local area of MEPCO, FESCO and PESCO and runs as base load plant during peak summer season. It has also black start facility in case of country wide blackout supports the system at 220 KV level. KAPCO referred to the data given in Indicative Generation Capacity Expansion Plan (IGCEP) 2021-30 which forecasted the power generation during 2020-21 which is very much less than the actual generation.

(viii). The Licensee also pointed to Section-14B of the NEPRA Act which pertains to cessation of generation licences in 2023. In this regard, KAPCO took the stance that the Federal Government may or may not decide to notify a mechanism for gradual cessation of generation licence and even if the same decides to gradually abolish the requirement of generation licence, KAPCO will be treated like other IPPs who have a valid generation license beyond 2023. Regarding query of financial implications of amendment in the PPA signed between KAPCO and CPPA-G regarding extension, it was submitted that through the settlement agreed, KAPCO has waived its right of 'interest on interest' which was approx. Rs. 41.1 billion till Dec-2020 and it was supposed to accumulate further due to continuous delay in payments by the Power Purchaser. In lieu of adjustment of LDs claims of Rs. 27 billion, KAPCO agreed to make plant available for 485 days without Capacity

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Purchase Price (CPP). Further, there is reduction in tariff as the company agreed to give discount of 11% on CPP as well as Variable O&M and rupee dollar parity has been locked at Rs. 168.60/-.

(ix). In consideration of the above, KAPCO claimed that had not been its power plant available for the period July 2021 to February 2022 (extended term) during which it generated 3,047 GWh, the additional cost to the Power Purchaser would have been more than Rs. 17 billion; thus avoiding burdening the consumers. During the hearing, the representatives from CPPA-G confirmed the stance of KAPCO and revealed that according to their calculations there was a benefit of around Rs. 48 billion which could have been passed on to the consumers on account of 'interest on interest' due to delay in payment to the company. The representative from WAPDA, being major shareholder of KAPCO (around 40%), supported the proposed extension as KAPCO is paying dividend to WAPDA since inception.

(G). Observation/Findings

(i). The Authority has examined the entire case in detail including the already granted Generation Licence of KAPCO, submitted application for renewal, comments of stakeholders, rejoinders from the Licensee, discussion on Issues framed for public hearing, RULA Study and provisions of relevant rules & regulations. The observations of the Authority in the matter are summarized in the following paragraphs.

(ii). In this regard, the Authority has observed that originally KAPCO was granted a Generation Licence (No. IPGL/020/2004 dated September 22, 2004) for its 1600 MW multi-fuel (natural gas, LSFO & HSD) based generation facility/combined cycle thermal power plant located at Kot Addu, district Muzaffargarh, in the province of Punjab. The said facility comprises of ten (10) GTs (93+96+79+80x3+77+79+107x2 MW), ten (10) HRSGs and five (05) STs (89+95+80+81+118 MW) having a term of seventeen (17) years which expired on September 21, 2022.

(iii). In its submissions made, the Licensee/KAPCO has requested for extension in the term of its generation licence for another period of ten (10) years from its above expiry. The Authority has observed that in terms of Section-26 of the NEPRA Act read with Rule-5(2) of the Generation Rules it can renew the term of the licence as it may deem appropriate. In this regard, Rule-5(2) of the Generation Rules

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stipulates that generation licence may be renewed for such further term in the manner provided for in the generation licence keeping in view: (a). the remaining maximum expected useful life of the units comprised in the generation facility; (b). the performance of the licensee during the then expiring term; and (c). the interests of the consumers and the electric power industry as a whole.

(iv). Further, according to Regulation-13 of the Licensing Regulations stipulates that the Authority is competent to renew the term of a licence in accordance with an application duly filed under sub-regulation (1), subject to and in accordance with such further changes as the Authority may deem fit, if in the opinion of the Authority such extension: (a) is in the interests of the consumers and the electric power industry as a whole; (b) is reasonably necessary to ensure the continuous, safe and reliable supply of electric power to consumers, keeping in view the financial and technical viability of the licensee; (c) is suitable on environmental grounds; and (d) is justified keeping in view the performance of the licensee during the expiring term.

(v). The Authority has observed that in order to ascertain the remaining useful life of the Complex, the Licensee conducted a study through renowned international consultant Ramboll of UK/Denmark. The consultant carried out a detailed study of overhauling / inspection and test reports by OEMs and other reports based on tests conducted by third party consultants. It has also taken into account the worldwide experience on different technologies pertaining to useful life assessment of power plants in its RULA study.

(vi). The Authority has reviewed the RULA study which states that normally the operating life before retirement of CCGTs has been 40-50 years around the globe. The study has assumed a 40-year extended operating life based on a nominal 8,000 operating hours per year, which equates to lifetime operating hours of 320,000. The operating hours of the generating units at KAPCO range between 94,000 to 180,000 indicating that the remaining life of the KAPCO units could be in the range 17-28 years. For all Gas turbine units, hot gas path components e.g. combustors, fuel nozzles, GT blades and vanes, etc. are being replaced periodically on Hot Gas Path Inspection (HGPI) and Major Over-Hauling (MOH) as per OEM recommendations. Further, the remaining life assessment has been discussed in detail module wise (total of five modules with each module comprising two GTs, two HRSGs and one STs) for all major components of the generating units including Gas Turbine, Steam Turbine, HRSGs, generators and transformers. In view of the said, it has been recommended

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that all the generating units are in good condition and can operate for another ten (10) years.

(vii). Regarding performance of the licensee, the Authority has noted that for the last five years the average plant availability was around 87.1% and commercial availability was 96%. The average Utilization factor for the last four years was 47.05%. Further, the generating units of KAPCO have demonstrated, high plant availability and enhanced plant performance regarding plant capacity as well as efficiency. The Annual Dependable Capacity (ADC) of generating units (GTs, STs & HRSGs) was performed in the year 2020 which demonstrated that the same are operating near to or better than IDC parameters (Initial Dependable Capacity test in1996). It is also pertinent to mention that efficiency of power plant in combined cycle mode ranges from 42-47% depending upon the fuel used for generation of electric power. A site visit was carried to inspect physical condition of different components of units and it was observed that the same were in good condition and supplying power to the national grid according to the dispatch requirements.

(viii). The Authority has observed that the power plant has capability of operating on multi-fuel and is located mid country being close to major load centers. In case of gas shortage for the power sector, the Licensee provides support to the system because of its flexibility and huge fuel storage capacity. The power is supplied to the National Grid through six (06) 132 kV transmission lines feeding the grids of MEPCO, PESCO and FESCO and six (06) 220 kV transmission lines to network of NTDC. In this regard, the relevant stakeholders including NTDC and MEPCO have strongly supported the extension in term of generation licence of KAPCO considering the power stability issues as explained in the preceding paragraphs.

(ix). About suitability of power plant on environmental grounds, the Authority has observed that KAPCO has recently submitted an Environment Monitoring Report to comply with all regulatory requirements. The review of the same reveals that all emissions of air, water and noise relating to plant operations are within limits established by Environment Protection Agency, Punjab. Further, KAPCO has been awarded Certificate of Appreciation from National Forum for Environment and Health in 17th Annual Environment Excellence Awards, 2020.

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(x). Notwithstanding the above, the Authority has noted with grave concern that CPPA-G and KAPCO have mutually extended the PPA for 485 days on account of non-availability of fuel treated as OFME events without its approval. Accordingly, the Authority has initiated legal proceedings against both the parties which are being carried out separately as the PPA extension was being done for a period beyond its generation licence and KAPCO should have filed its application for licence renewal as per the spirit of the applicable documents. However, in the instant case KAPCO first extended the term of its PPA (which was scheduled to expire on June 26, 2021) by 485 days i.e. beyond its generation licence (which was going to expire on September 21, 2021) and then submitted an application on June 24, 2021 for renewal of its generation licence. However, taking lenient view in the matter the Authority considers that renewal of generation licence of KAPCO, *inter alia*: (a). is in the interests of the consumers and the electric power industry as a whole; (b). is reasonably necessary to ensure the continuous, safe and reliable supply of electric power to consumers, keeping in view the financial and technical viability of the licensee; (c). is suitable on environmental grounds; and (d). is justified keeping in view the performance of the licensee during the expiring term as explained above.

(H). Decision of the Authority

(i). In view of the above, the Authority is satisfied that KAPCO has complied with all the requirements of the Generation Rules and Licensing Regulations pertaining to renewal in term of its generation licence therefore, it has case for it to be considered. The Authority has observed that the independent consultant hired for the purpose of assessment of the remaining useful life of the generation facility has concluded that the plant and the other related equipment can be used for another period of ten (10) years.

(ii). In consideration of the above, the Authority has deliberated the issue at length and has observed that most of the important relevant stakeholders including WAPDA, MEPCO and NTDC have highlighted the significance of KAPCO in the system and also based their arguments for extension in the term of the licence that there are certain constraint of system for which operation of the KAPCO is essential. The Authority does not endorse such arguments of MEPCO and NTDC for the operation of an old plant though relatively efficient. The Authority has been directing NTDC being a system planner and operator to remove all such constraints on priority.

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However, it is regretted that despite the lapse of more than four (04) years the situation has not changed much as these entities are still pressing for the availability of KAPCO in the system.

(iii). The Authority hereby like to reiterate that the in terms of Section-7(6) of the NEPRA Act, safeguarding the interest of the consumer is one of its prime responsibility. Further, provisions of the electric power to consumers at reasonable and affordable prices is essential which can only be possible if there are little or no system constraints. In consideration of the said, the Authority hereby extend the term of the generation licence of KAPCO for a period of three (03) years and directs NTDC and MEPCO to resolve the referred technical issues within three (03) years as such constraints are resulting in operation of KAPCO in violation of Economic Merit Order.

(iv). As explained in the preceding paragraph, the Authority has allowed the extension in the term of the licence of KAPCO for a period of three (03) years for supplying to the National Grid however, KAPCO will be at liberty to operate for supplying to National Grid if it is in the IGCEP and conforms to the Least Cost Option Criteria (LCOC). Further to the said, KAPCO will also be at liberty to operate as a merchant plant in the Competitive Trading Bilateral Contract Market (CTBCM) in the balancing market subject to the provisions of the approved Market Code.

(v). Notwithstanding the above, the Authority hereby clarifies that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is its sole prerogative. In this regard, the existing PPA dated June 27, 1996 between KAPCO and WAPDA/NTDC/CPPA-G was executed prior to the promulgation of the NEPRA Act that is why the Authority at the time of grant of generation licence of KAPCO protected its PPA. However, the Authority directs KAPCO and other related entities to submit the next PPA if executed after the expiry of the current one, for its consideration and approval before the start of supply to the National grid.

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(vi). In consideration of the above, the Generation Licence (No. IPGL/020/2004 dated September 22, 2004) is hereby renewed for a term of three (03) years from the date of expiry of the same without prejudice to already initiated legal proceedings against KAPCO and CPPA-G on the issue of extension in PPA. The changes made in the Generation Licence are attached as annexure to this determination. The said renewal will be subject to the provisions contained in the NEPRA Act, relevant rules and regulations framed there under, terms & conditions of the Generation Licence and other applicable documents.

Authority

Engr. Maqsood Anwar Khan
(Member)

Rafique Ahmed Shaikh
(Member)

Tauseef H. Farooqi
(Chairman)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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080922

ANNEXURE T

PART LOAD ADJUSTMENT

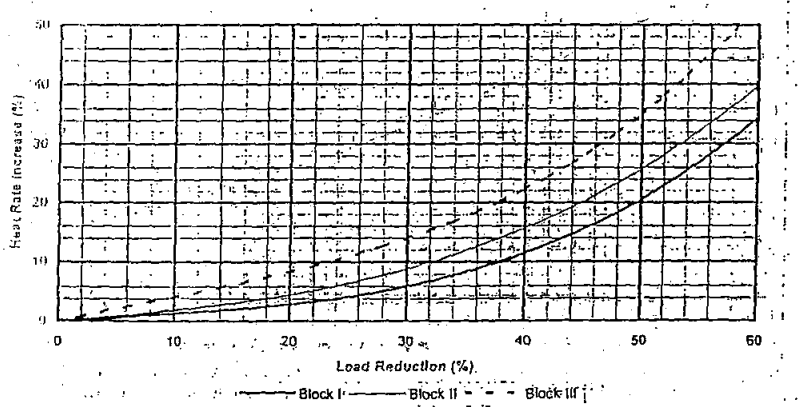
SCHEDULE F

Annex-IV

Part Load Adjustment

(Percentage increase in Fuel Cost Component)

Load Reduction %	Block I	Block II	Block III
0	0.00	0.00	0.00
2	0.30	0.40	0.93
4	0.57	0.79	1.80
6	0.83	1.17	2.64
8	1.08	1.57	3.44
10	1.33	1.98	4.24
12	1.59	2.41	5.03
14	1.86	2.88	5.83
16	2.19	3.39	6.65
18	2.54	3.96	7.50
20	2.94	4.58	8.39
22	3.39	5.27	9.34
24	3.90	6.03	10.35
26	4.49	6.87	11.45
28	5.17	7.80	12.63
30	5.93	8.83	13.92
32	6.79	9.95	15.32
34	7.77	11.19	16.84
36	8.85	12.54	18.51
38	10.07	14.01	20.32
40	11.42	15.61	22.29
42	12.92	17.34	24.43
44	14.57	19.20	26.76
46	16.38	21.21	29.28
48	18.36	23.36	32.01
50	20.52	25.67	34.96
52	22.87	28.13	38.14
54	25.42	30.76	41.57
56	28.17	33.54	45.24
58	31.14	36.50	49.19
60	34.33	39.63	53.41



The coefficients for equations to be used in the derivation of the part load adjustment are as follows:

	Block I	Block II	Block III
A	1.559E-01	2.041E-01	4.771E-01
B	-4.154E-03	-2.629E-03	-7.758E-03
C	1.849E-04	2.050E-04	2.440E-04
D	0	-5.731E-07	0

$IM = A \times R + B \times R^2 + C \times R^3 + D \times R^4$ where R = load reduction (%)

KOT ADDU POWER COMPANY LIMITED

A. Hayat

ANNEXURE U

REFERENCE GENERATION TARIFF TABLE

PLANT 1

FUEL

Gas

Particulars		FY18			FY19			FY20			FY21			FY22			Average / Weighted average (as applicable)		
		EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB
Gas consumed	(m3)	296,575,178	235,605,990	203,231,183	257,177,162	213,995,661	145,496,662	180,871,498	142,865,648	107,171,757	217,651,235	113,970,818	109,722,740	107,393,758	87,972,586	66,252,180	211,933,786	160,882,180	130,374,947
Average CV of gas	(KJ/m3)	32,674.3	32,674.3	32,674.3	33,600.4	33,600.4	33,600.4	33,833.9	33,833.9	33,833.9	33,922.1	33,922.1	33,922.1	33,784.0	33,784.0	33,784.0	33,562.9	33,562.9	33,562.9
Export	(GWh)	1,252.8	900.7	815.1	1,124.0	852.3	587.8	768.5	574.2	442.9	943.1	456.1	438.3	450.1	385.6	340.9	911.7	633.6	525.0
Energy consumed	(GJ)	9,685,325	7,691,933	6,635,150	8,628,991	7,173,754	4,876,634	6,088,351	4,812,127	3,608,890	7,351,138	3,831,802	3,689,585	3,603,353	3,286,436	2,890,670	7,097,432	5,358,211	4,340,182
Net heat rate LHV 1	(KJ/kWh)	7,731	8,540	8,140	7,677	8,417	8,298	7,722	8,381	8,148	7,773	8,401	8,417	8,005	8,523	8,478	7,752	8,456	8,267
Efficiency LHV 2, 3	(%)	46.6	42.2	44.2	46.9	42.8	43.4	46.6	43.0	44.2	46.3	42.9	42.8	45.0	42.2	42.5	46.4%	42.6%	43.6%

LSFO

Particulars		FY18			FY19			FY20			FY21			FY22			Average / Weighted average (as applicable)		
		EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB
LSFO consumed	(MT)	258,932	154,738	123,353	149,603	58,782	41,483	78,536	38,739	38,678	105,141	39,481	42,690	282,511	137,729	115,236	174,945	85,890	72,488
Average CV of LSFO	(KJ/Kg)	40,707.0	40,707.0	40,707.0	41,149.8	41,149.8	41,149.8	41,434.4	41,434.4	41,434.4	41,108.1	41,108.1	41,108.1	41,104.0	41,104.0	41,104.0	41,100.7	41,100.7	41,100.7
Export	(GWh)	1,346.3	747.6	598.4	774.0	286.2	197.8	416.2	186.5	195.3	558.9	188.1	209.3	1,432.3	640.8	556.2	905.5	409.9	351.4
Energy consumed	(GJ)	10,534,615	6,292,240	5,016,842	6,151,725	2,414,873	1,704,839	3,242,680	1,598,611	1,638,524	4,306,001	1,616,273	1,747,101	11,559,043	5,621,240	4,703,548	7,158,853	3,508,687	2,962,171
Net heat rate LHV 1	(KJ/kWh)	7,825	8,417	8,384	7,948	8,437	8,617	7,792	8,571	8,390	7,705	8,594	8,349	8,070	8,772	8,457	7,906	8,561	8,430
Efficiency LHV 2, 3	(%)	46.0	42.8	42.9	45.3	42.7	41.8	46.2	42.01	42.9	46.7	41.9	43.1	44.6	41.0	42.6	45.5%	42.1%	42.7%

HSD

Particulars		FY18			FY19			FY20			FY21			FY22			Average / Weighted average (as applicable)		
		EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB	EB I	EB IIA	EB IIB
HSD consumed	(KL)	1,739	2,435	1,233	2,220	1,968	901	1,269	968	822	28,955	1,068	785	6,947	3,068	1,586	7,826	1,901	1,057
Average CV of HSD	(KJ/litre)	35,730.7	35,730.7	35,730.7	36,133.4	36,133.4	36,133.4	36,153.7	36,153.7	36,153.7	36,313.7	36,313.7	36,313.7	36,227.4	36,227.4	36,227.4	36,111.8	36,111.8	36,111.8
Export	(GWh)	4.0	5.9	2.8	6.1	4.2	1.5	3.4	2.0	1.3	114.6	2.1	1.5	22.4	5.8	2.7	30.1	4.0	2.0
Energy consumed	(GJ)	62,134	87,019	44,042	80,204	71,115	32,559	45,833	34,924	29,720	976,982	38,794	27,772	251,682	111,181	58,734	283,367	68,603	38,185
Net heat rate LHV 1	(KJ/kWh)	15,445	14,653	15,478	13,135	16,882	21,077	13,502	17,539	22,775	8,525	18,315	18,135	11,227	19,056	20,961	9,412	17,071	19,216
Efficiency LHV 2, 3, 4	(%)	23.3	24.6	23.3	27.4	21.3	17.1	26.7	20.5	15.8	42.2	19.7	19.9	32.1	18.9	17.2	38.3%	21.1%	18.7%

[1] Weighted average net heat rate for five fiscal years is computed and presented in the last three columns of tables presented above

[2] Weighted average efficiency for five fiscal years is computed and presented in the last three columns of tables presented above

[3] Efficiency is net of part load adjustment

[4] Since HSD is primarily used for start-ups, therefore, its weighted average efficiency is not a relevant indicator to be used for computation of relevant tariff components. Accordingly, the Petitioner has used LSFO efficiencies instead.

VARIABLE OPERATION & MAINTENANCE (VOM)

Plant operating profile

Fuel type	FY18			FY19			FY20			FY21			FY22			Average			Requested*		
	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB
Gas	46.1%	54.4%	57.8%	58.0%	74.8%	74.7%	65.3%	75.2%	68.3%	58.3%	70.8%	67.5%	23.6%	37.4%	37.9%	50.9%	62.4%	61.4%	0.0%	0.0%	0.0%
LSFO	51.7%	45.2%	42.2%	40.6%	25.0%	25.1%	34.5%	24.5%	30.5%	34.6%	29.1%	32.2%	75.2%	62.1%	61.8%	47.3%	37.2%	38.4%	100.0%	100.0%	100.0%
HSD	0.2%	0.4%	0.2%	0.3%	0.4%	0.2%	0.3%	0.3%	0.2%	7.1%	0.3%	0.2%	1.2%	0.6%	0.3%	1.8%	0.4%	0.2%	0.0%	0.0%	0.0%

*Requested cost has been estimated for LSFO based plant operations. Following adjustment factors are applicable for operations on Gas/RLNG and HSD.

Adjustment factors:	[redacted] I	[redacted] IIA	[redacted] IIB
Gas operations	173.6%	208.7%	208.7%
HSD operations	172.6%	180.6%	180.8%

Variable O&M cost - Local (PKR)

Particulars	FY18			FY19			FY20			FY21			FY22			Average			Requested		
	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB
Fuel additives, chemicals etc.	38,134,028	21,870,347	14,424,971	30,097,356	15,886,665	11,027,337	32,202,534	18,904,858	16,790,823	34,418,368	14,757,794	13,805,861	43,483,450	22,939,240	19,763,710	36,187,148	18,874,183	15,904,520	78,931,022	102,727,964	56,723,373
Plant maintenance	23,904,435	20,581,631	20,310,289	22,886,652	18,049,635	18,961,386	18,573,044	15,931,071	14,332,674	23,385,235	15,815,744	15,989,502	14,047,580	9,083,223	17,209,212	20,580,380	16,054,261	17,380,615	28,603,231	38,132,774	24,707,143
Gas turbines overhauls	4,727,529	45,411,910	10,304,849	5,830,561	2,833,901	8,787,834	88,644,384	3,117,404	6,184,143	1,683,883	48,848,574	14,435,228	5,148,068	4,572,571	4,503,008	21,370,847	21,158,872	6,830,032	27,218,754	40,290,619	8,586,738
Major repairs and renewals	17,178,003	10,428,330	15,104,537	8,644,569	4,927,057	3,123,602	9,888,509	2,204,816	6,023,808	7,811,915	787,793	22,744,842	5,200,938	4,288,546	1,123,546	9,728,404	4,528,908	9,424,067	72,066,002	41,878,321	77,756,558
Total	83 941 996	98 292 219	60 143 646	67 469 140	42 529 354	41 900 271	150 111 571	40 158 149	42 317 549	67 429 141	81 212 505	67 125 293	67 880 352	40 891 583	42 599 476	88 413 598	60 616 224	51 614 235	204 819 609	224 027 677	167 773 812

Variable O&M cost - Foreign (PKR)

Particulars	FY18			FY19			FY20			FY21			FY22			Average			Requested		
	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB
Fuel additives, chemicals etc.	213,400,011	125,402,256	101,967,845	183,188,441	72,761,212	51,324,074	108,780,290	54,749,606	65,568,709	133,428,967	64,881,208	55,257,488	400,253,646	196,504,713	163,937,645	208,005,831	102,621,636	85,614,748	275,896,110	248,287,863	284,687,088
Plant maintenance	50,756,192	41,943,068	51,281,134	48,412,130	34,637,297	43,394,281	37,611,648	23,851,473	23,047,981	28,040,372	32,407,362	32,267,207	57,186,244	27,615,882	52,795,077	43,987,317	32,071,182	40,581,133	75,627,281	79,028,294	55,721,751
Gas turbines overhauls	16,273,816	388,291,740	114,025,305	245,792,324	82,440,163	48,081,758	583,038,706	10,477,532	84,155,798	4,017,105	382,078,346	78,323,183	17,147,938	38,071,221	4,892,170	173,253,578	178,472,002	66,086,643	324,775,618	243,022,443	105,932,211
Major repairs and renewals	41,432,228	28,286,349	72,158,845	5,680,247	4,347,107	22,370,027	18,640,378	10,583,707	154,103,907	458,719,973	4,628,182	75,787,588	18,844,580	30,295,572	8,900,984	108,188,483	15,207,779	60,208,268	880,157,822	241,774,889	93,588,888
Total	321 862 247	581 924 341	339 453 139	483 073 142	194 186 779	165 170 140	747 069 025	99 662 519	326 874 375	622 201 607	483 704 079	239 665 429	493 112 602	292 797 398	229 525 896	533 456 205	328 372 613	257 537 792	1 226 356 835	812 391 270	539 927 739

Total variable O&M cost (PKR)

Particulars	FY18			FY19			FY20			FY21			FY22			Average			Requested		
	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB	[redacted] I	[redacted] IIA	[redacted] IIB
Fuel additives, chemicals etc.	248,534,039	147,272,602	120,412,816	213,865,799	88,859,877	62,351,411	141,982,833	73,654,666	72,357,832	167,844,825	79,449,002	69,223,130	443,737,295	218,443,962	183,701,356	243,192,978	121,496,022	101,808,269	352,827,132	350,995,827	341,390,461
Plant maintenance	74,660,627	62,525,419	71,591,427	71,298,783	53,506,883	62,355,679	56,184,690	39,782,543	37,380,635	49,425,607	48,223,106	48,278,710	71,213,826	36,699,105	70,004,289	64,568,706	48,129,453	57,921,748	104,230,511	118,158,068	80,428,895
Gas turbines overhauls	21,001,345	433,703,650	124,330,154	251,431,885	85,274,064	54,869,592	672,681,099	13,594,936	90,319,941	5,710,788	411,927,920	90,758,411	22,296,027	43,643,792	9,395,178	194,624,225	197,628,874	73,934,675	351,994,572	283,313,062	114,518,949
Major repairs and renewals	58,608,231	38,714,679	87,263,382	14,304,816	9,274,164	25,493,629	28,338,874	12,788,523	190,127,715	466,831,888	5,313,955	98,542,410	23,745,525	34,582,117	8,024,541	117,925,887	19,734,686	79,880,335	822,224,224	283,650,990	171,323,226
Total	402 504 242	680 216 559	403 597 779	550 901 282	236 711 987	205 070 411	897 187 596	139 820 668	359 185 923	689 613 108	544 913 984	306 900 661	560 992 673	333 378 977	271 125 363	620 259 796	386 989 037	309 156 027	1 141 276 439	1 036 118 946	707 661 531

FIXED OPERATIONS & MAINTENANCE (FOM)

Fixed O&M cost - Local (PKR)							
Particulars	FY18	FY19	FY20	FY21	FY22	Average	Requested
Salaries, Wages & Benefits	1,073,788,500	1,212,787,342	1,167,877,252	1,340,209,069	1,397,420,449	1,238,416,523	1,454,121,110
Security Charges	37,264,443	46,619,141	51,613,400	50,823,547	60,758,332	49,415,773	69,818,729
Health & Medication	61,703,153	64,255,548	71,430,856	89,788,918	100,165,017	77,468,698	131,262,464
3rd Party Contract Services	71,050,807	88,877,752	84,395,395	83,142,523	103,759,901	86,245,276	128,020,884
Travelling	18,946,433	15,634,547	6,338,693	6,711,805	10,645,281	11,655,352	13,116,891
Motor vehicles running	34,505,134	39,768,302	41,436,370	41,559,934	50,913,311	41,636,610	53,337,822
Postage, telephone and telex	11,245,202	6,905,757	5,894,023	7,591,292	7,386,364	7,804,528	8,206,367
Legal and professional charges	244,181,780	24,056,739	27,961,414	30,227,606	38,474,436	72,980,395	65,665,178
Liquidated damages arbitration cost	4,477,614	32,270,401	59,405,326	64,758,019	3,793,331	32,940,938	-
Infomation technolgy maintenance cost	7,976,247	8,549,645	8,127,312	7,556,303	10,258,698	8,493,641	40,996,220
Auditors' remuneration	3,808,995	4,258,634	4,759,237	5,635,534	5,615,261	4,815,532	8,211,115
Printing, stationery and periodicals	12,204,166	8,551,210	7,034,586	8,075,159	8,339,047	8,840,834	9,849,539
Repairs and maintenance	-	-	-	-	-	-	-
Training expenses	11,852,615	14,890,526	8,191,731	3,573,536	5,842,225	8,870,127	8,211,115
Rent, rates and taxes	2,140,342	1,956,074	2,548,694	4,054,235	2,968,784	2,733,626	-
NEPRA fee	-	-	11,995,691	13,127,714	-	5,024,681	26,161,472
Site infrastructure maintenance & running	72,266,828	84,977,479	73,423,280	75,788,154	86,769,143	78,644,977	114,879,636
Education fee	22,071,178	21,511,593	21,249,681	21,296,879	19,405,152	21,106,897	22,980,676
Donations	-	-	6,827,572	149,484	5,413,882	2,478,188	12,322,608
Provision for stores obsolecence	31,111,763	-	-	-	-	6,222,353	-
Standby auxiliary consumption	-	109,932,141	154,759,880	181,424,193	143,745,458	117,972,334	424,968,141
Other expenses	76,983,742	31,936,160	27,842,702	53,002,525	47,920,466	47,537,119	53,337,822
Total	1,797,578,942	1,817,738,989	1,843,113,095	2,088,496,432	2,109,594,540	1,931,304,400	2,645,467,789

Fixed O&M cost - Foreign (PKR)							
Particulars	FY18	FY19	FY20	FY21	FY22	Average	Requested
Salaries, Wages & Benefits	-	-	-	-	-	-	-
Security Charges	-	-	-	-	-	-	-
Health & Medication	-	-	-	-	-	-	-
3rd Party Contract Services	-	-	-	-	-	-	-
Travelling	-	-	-	-	-	-	-
Motor vehicles running	-	-	-	-	-	-	-
Postage, telephone and telex	-	-	-	-	-	-	-
Legal and professional charges	8,272,746	11,607,370	11,304,426	12,814,676	13,869,953	11,573,834	-
Liquidated damages arbitration cost	17,910,455	129,081,603	237,621,303	259,032,073	19,897,429	132,708,572	-
Infomation technolgy maintenance cost	6,008,054	7,906,706	7,281,900	5,878,838	9,478,325	7,310,765	-
Auditors' remuneration	-	-	-	-	-	-	-
Printing, stationery and periodicals	-	-	-	-	-	-	-
Repairs and maintenance	-	-	-	-	-	-	-
Training expenses	-	-	-	-	-	-	-
Rent, rates and taxes	695,335	327,178	-	-	23,208	209,144	-
NEPRA fee	8,251,360	9,821,738	240,200	-	12,506,029	6,163,866	-
Site infrastructure maintenance & running	8,276,953	6,636,322	6,516,127	5,842,946	5,409,993	6,536,468	-
Education fee	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-
Provision for stores obsolecence	-	-	-	-	-	-	-
Standby auxiliary consumption	-	-	-	-	-	-	-
Other expenses	-	-	-	108,988	-	21,798	-
Total	49,414,903	165,380,918	262,963,956	283,677,521	61,184,937	164,524,447	-

Total fixed O&M cost (PKR)							
Particulars	FY18	FY19	FY20	FY21	FY22	Average	Requested
Salaries, Wages & Benefits	1,073,788,500	1,212,787,342	1,167,877,252	1,340,209,069	1,397,420,449	1,238,416,523	1,454,121,110
Security Charges	37,264,443	46,619,141	51,613,400	50,823,547	60,758,332	49,415,773	69,818,729
Health & Medication	61,703,153	64,255,548	71,430,856	89,788,918	100,165,017	77,468,698	131,262,464
3rd Party Contract Services	71,050,807	88,877,752	84,395,395	83,142,523	103,759,901	86,245,276	128,020,884
Travelling	18,946,433	15,634,547	6,338,693	6,711,805	10,645,281	11,655,352	13,116,891
Motor vehicles running	34,505,134	39,768,302	41,436,370	41,559,934	50,913,311	41,636,610	53,337,822
Postage, telephone and telex	11,245,202	6,905,757	5,894,023	7,591,292	7,386,364	7,804,528	8,206,367
Legal and professional charges	252,454,526	35,664,109	39,265,840	43,042,282	52,344,389	84,554,229	65,665,178
Liquidated damages arbitration cost	22,388,069	161,352,003	297,026,628	323,790,092	23,690,759	165,649,510	-
Infomation technolgy maintenance cost	13,984,301	16,456,351	15,409,211	13,435,141	19,737,023	15,804,406	40,996,220
Auditors' remuneration	3,808,995	4,258,634	4,759,237	5,635,534	5,615,261	4,815,532	8,211,115
Printing, stationery and periodicals	12,204,166	8,551,210	7,034,586	8,075,159	8,339,047	8,840,834	9,849,539
Repairs and maintenance	-	-	-	-	-	-	-
Training expenses	11,852,615	14,890,526	8,191,731	3,573,536	5,842,225	8,870,127	8,211,115
Rent, rates and taxes	2,835,676	2,283,252	2,548,694	4,054,235	2,991,992	2,942,770	-
NEPRA fee	8,251,360	9,821,738	12,235,891	13,127,714	12,506,029	11,188,547	26,161,472
Site infrastructure maintenance & running	80,543,781	91,613,801	79,939,407	81,631,100	92,179,136	85,181,445	114,879,636
Education fee	22,071,178	21,511,593	21,249,681	21,296,879	19,405,152	21,106,897	22,980,676
Donations	-	-	6,827,572	149,484	5,413,882	2,478,188	12,322,608
Provision for stores obsolecence	31,111,763	-	-	-	-	6,222,353	-
Standby auxiliary consumption	-	109,932,141	154,759,880	181,424,193	143,745,458	117,972,334	424,968,141
Other expenses	76,983,742	31,936,160	27,842,702	53,111,513	47,920,466	47,558,916	53,337,822
Total	1,846,993,845	1,983,119,907	2,106,077,051	2,372,173,953	2,170,779,477	2,095,828,847	2,645,467,789

A. Aqil

WORKING CAPITAL COST (WCC)

Fuel type		Gas				LSFO				HSD			
		EB I	EB IIA	EB IIB	Plant 1	EB I	EB IIA	EB IIB	Plant 1	EB I	EB IIA	EB IIB	Plant 1
Net capacity	MW	347.00	298.00	247.00	892.00	334.00	289.00	236.00	859.00	334.00	289.00	236.00	859.00
Hours per day	Hours	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
Base rate		18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%
Spread over KIBOR		2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Total interest rate		20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%
Fuel receivable:													
Days		25	25	25		25	25	25		25	25	25	
Heat rate		7,347	8,015	7,904		7,905	8,561	8,487		7,493	8,115	8,044	
Fuel price		3,749.18	3,749.18	3,749.18		111.05	111.05	111.05		111.05	111.05	111.05	
Amount required for 25 days on 30% load	PKR	1,720,576,527	1,811,941,750	1,317,503,066	4,850,021,343	1,309,683,025	1,227,282,667	993,468,489	3,530,434,181	1,241,343,037	1,163,242,375	941,628,752	3,346,214,164
GST	PKR	292,498,010	274,030,098	223,975,521	790,503,628	222,646,114	208,638,053	168,889,643	600,173,811	211,028,316	197,751,204	160,076,688	568,856,408
Total amount required	PKR	2,013,074,536	1,885,971,848	1,541,478,587	5,440,524,971	1,532,329,139	1,435,920,720	1,162,358,133	4,130,607,992	1,452,371,353	1,360,993,579	1,101,705,639	3,915,070,572
Cost of receivables	PKR	411,271,128	385,304,048	314,924,075	1,111,499,252	313,054,843	293,358,603	237,468,766	843,883,213	296,719,467	278,050,988	225,078,462	799,848,918
LSFO inventory													
Days		15	15	15		15	15	15		15	15	15	
Heat rate		7,905	8,561	8,487		7,905	8,561	8,487		7,905	8,561	8,487	
CV	KJ/Kg	40,297	40,297	40,297		40,297	40,297	40,297		40,297	40,297	40,297	
LSFO requirement for 15 days on 60% load	Tons	14,153	13,262	10,736	38,150	14,153	13,262	10,736	38,150	14,153	13,262	10,736	38,150
LSFO price including sales tax	PKR / Ton	129,926	129,926	129,926		129,926	129,926	129,926		129,926	129,926	129,926	
Total amount required	PKR	1,838,794,967	1,723,104,864	1,394,829,759	4,956,729,590	1,838,794,967	1,723,104,864	1,394,829,759	4,956,729,590	1,838,794,967	1,723,104,864	1,394,829,759	4,956,729,590
Cost of LSFO inventory	PKR	375,665,812	352,030,324	284,963,720	1,012,659,855	375,665,812	352,030,324	284,963,720	1,012,659,855	375,665,812	352,030,324	284,963,720	1,012,659,855
Cost of SBLC - RLNG													
Days		30	30	30		30	30	30		30	30	30	
Amount required for 30 days on 100% load	PKR	6,882,306,107	6,447,767,000	5,270,012,264	18,600,085,372	6,882,306,107	6,447,767,000	5,270,012,264	18,600,085,372	6,882,306,107	6,447,767,000	5,270,012,264	18,600,085,372
SBLC charges		1.50%	1.50%	1.50%		1.50%	1.50%	1.50%		1.50%	1.50%	1.50%	
Cost of SBLC - RLNG	PKR	103,234,592	96,716,505	79,050,184	279,001,281	103,234,592	96,716,505	79,050,184	279,001,281	103,234,592	96,716,505	79,050,184	279,001,281
Cost of SBLC - LSFO													
Days		30	30	30		30	30	30		30	30	30	
Amount required for 30 days on 100% load	PKR	5,238,732,099	4,909,130,667	3,973,873,957	14,121,736,724	5,238,732,099	4,909,130,667	3,973,873,957	14,121,736,724	5,238,732,099	4,909,130,667	3,973,873,957	14,121,736,724
SBLC charges		1.50%	1.50%	1.50%		1.50%	1.50%	1.50%		1.50%	1.50%	1.50%	
Cost of SBLC - LSFO	PKR	78,580,981	73,636,960	59,608,109	211,826,051	78,580,981	73,636,960	59,608,109	211,826,051	78,580,981	73,636,960	59,608,109	211,826,051
Total cost of Working Capital		968,752,513	907,687,837	738,546,088	2,614,986,438	870,536,228	815,742,392	661,091,780	2,347,370,399	854,200,852	800,434,777	648,700,475	2,303,336,105

GAS (RLNG)

Kot Addu Power Company Limited - Plant 1

Reference tariff table Gas/RLNG

Year	Energy Purchase Price (PKR/kWh) - EB I				Energy Purchase Price (PKR/kWh) - EB IIA				Energy Purchase Price (PKR/kWh) - EB IIB				Capacity Purchase Price (PKR/kW/Hour) @ 30%				Total tariff (PKR/kWh)		
	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fixed O&M local	Cost of W/C	ROE	Total CPP	EB I	EB IIA	EB IIB
1	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**
2	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**
3	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**
4	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**
5	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**
Average																			
1 - 5	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**
Levelized																			
1 - 5	27.5469	0.1295	0.7815	**28.4578**	30.0511	0.1371	0.4969	**30.6851**	29.6334	0.1238	0.3985	**30.1558**	1.1285	1.1155	3.0495	**5.2936**	**33.7514**	**35.9786**	**35.4494**

LOW SULPHUR FURNANCE OIL (LSFO)

Kot Addu Power Company Limited - Plant 1

Reference tariff table LSFO

Year	Energy Purchase Price (PKR/kWh) - EB I				Energy Purchase Price (PKR/kWh) - EB IIA				Energy Purchase Price (PKR/kWh) - EB IIB				Capacity Purchase Price (PKR/kW/Hour) @ 30%				Total tariff (PKR/kWh)		
	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fixed O&M local	Cost of W/C	ROE	Total CPP	EB I	EB IIA	EB IIB
1	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**
2	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**
3	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**
4	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**
5	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**
Average																			
1 - 5	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**
Levelized																			
1 - 5	21.7845	0.2333	1.4087	**23.4265**	23.5925	0.2950	1.0693	**24.9567**	23.3867	0.2705	0.8705	**24.5277**	1.1719	1.0398	3.1667	**5.3784**	**28.8049**	**30.3351**	**29.9061**

HIGH SPEED DIESEL (HSD)

Kot Addu Power Company Limited - Plant 1

Reference tariff table HSD

Year	Energy Purchase Price (PKR/kWh) - EB I				Energy Purchase Price (PKR/kWh) - EB IIA				Energy Purchase Price (PKR/kWh) - EB IIB				Capacity Purchase Price (PKR/kW/Hour) @ 30%				Total tariff (PKR/kWh)		
	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fixed O&M local	Cost of W/C	ROE	Total CPP	EB I	EB IIA	EB IIB
1	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229
2	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229
3	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229
4	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229
5	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229
Average																			
1 - 5	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229
Levelized																			
1 - 5	63.3713	0.1353	0.8166	64.3231	68.6308	0.1633	0.5921	69.3862	68.0322	0.1498	0.4820	68.6640	1.1719	1.0203	3.1667	5.3589	69.6820	74.7451	74.0229

PLANT 2

FUEL

Gas													
Particulars		FY18		FY19		FY20		FY21		FY22		Average / Weighted average (as applicable)	
		EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
Gas consumed	(m3)	181,567,083	149,696,472	160,997,005	84,349,895	129,379,628	49,380,953	86,342,974	33,597,511	97,873,994	65,574,786	131,232,137	76,519,923
Average CV of gas	(KJ/m3)	32,674.3	32,674.3	33,600.4	33,600.4	33,833.9	33,833.9	33,922.1	33,922.1	33,784.0	33,784.0	33,562.9	33,562.9
Export	(GWh)	707.1	533.8	635.8	320.0	527.4	191.8	345.8	130.5	384.4	244.0	520.1	284.0
Energy consumed	(GJ)	5,756,315	4,884,481	5,274,114	2,821,232	4,297,233	1,660,256	2,910,633	1,130,972	3,258,736	2,196,578	4,299,406	2,538,704
Net heat rate LHV 1	(KJ/kWh)	8,140	9,151	8,296	8,816	8,148	8,657	8,417	8,664	8,478	9,001	8,267	8,938
Efficiency LHV 2, 3	(%)	42.9	39.3	42.4	40.8	43.6	41.6	42.9	41.6	42.1	40.0	42.8	40.7

LSFO													
Particulars		FY18		FY19		FY20		FY21		FY22		Average / Weighted average (as applicable)	
		EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
LSFO consumed	(MT)	94,915		36,078		30,554		35,936		102,609		60,018	
Average CV of LSFO	(KJ/Kg)	40,707.0		41,149.8		41,434.4		41,108.1		41,104.0		41,100.7	
Export	(GWh)	459.6		166.4		146.0		172.9		488.5		286.7	
Energy consumed	(GJ)	3,859,811		1,483,085		1,262,726		1,469,729		4,186,266		2,452,323	
Net heat rate LHV 1	(KJ/kWh)	8,399		8,910		8,648		8,503		8,570		8,555	
Efficiency LHV 2, 3	(%)	42.9		40.4		41.6		42.3		42.0		41.8	

HSD													
Particulars		FY18		FY19		FY20		FY21		FY22		Average / Weighted average (as applicable)	
		EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
HSD consumed	(KL)	844	18,505	979	1,082	801	-	693	-	1,505	7,662	964	5,450
Average CV of HSD	(KJ/litre)	35,730.7	35,730.7	36,133.4	36,133.4	36,153.7	36,153.7	36,313.7	36,313.7	36,227.4	36,227.4	36,111.8	36,111.8
Export	(GWh)	1.7	60.9	1.7	2.8	1.2	-	1.0	-	2.4	23.7	1.6	17.5
Energy consumed	(GJ)	30,147	661,189	35,389	39,086	28,971	-	25,155	-	54,506	277,584	34,834	195,572
Net heat rate LHV 1	(KJ/kWh)	18,258	10,857	20,881	13,877	23,735	-	24,582	-	22,932	11,522	21,862	11,197
Efficiency LHV 2, 3, 4	(%)	19.7	33.2	17.2	25.9	15.2	0.0	14.6	0.0	15.7	31.2	16.5	18.1

[1] Weighted average net heat rate for five fiscal years is computed and presented in the last three columns of tables prsented above

[2] Weighted average efficiency for five fiscal years is computed and presented in the last three columns of tables prsented above

[3] Efficiency is net of part load adjustment

[4] Since HSD is primarily used for start-ups, therefore, its weighted average efficiency is not a relevant indicator to be used for computation of relevant tariff components. Accordingly, the Petitioner has used LSFO efficiencies instead.

VARIABLE OPERATION & MAINTENANCE (VOM)

Plant operating profile														
Fuel type	FY18		FY19		FY20		FY21		FY22		Average		Requested*	
	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
Gas	60.5%	89.8%	79.1%	99.1%	78.2%	100.0%	86.5%	100.0%	43.9%	91.2%	65.6%	96.0%	0.0%	100.0%
LSFO	39.3%	0.0%	20.7%	0.0%	21.6%	0.0%	33.3%	0.0%	55.8%	0.0%	34.2%	0.0%	100.0%	0.0%
HSD	0.1%	10.2%	0.2%	0.9%	0.2%	0.0%	0.2%	0.0%	0.3%	8.8%	0.2%	4.0%	0.0%	0.0%

*Requested cost has been estimated for LSFO based plant operations. Following adjustment factors are applicable for operations on GAS/RLNG and HSD.

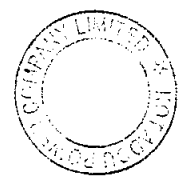
Adjustment factors:

Gas operations	47.9%	92.3%
HSD operations	55.4%	139.8%

Variable O&M cost - Local (PKR)														
Particulars	FY18		FY19		FY20		FY21		FY22		Average		Requested	
	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
Fuel additives, chemicals etc.	14,930,843	5,659,946	10,747,356	3,121,577	16,186,488	3,391,899	11,306,654	1,862,038	18,813,987	4,363,478	14,397,066	3,679,788	56,723,373	25,000,000
Plant maintenance	16,754,591	7,304,009	19,362,627	5,281,442	15,119,326	3,951,596	12,800,603	3,157,644	17,190,080	8,492,779	16,245,445	5,637,494	21,707,143	1,394,976
Gas turbines overhauls	10,766,575	12,961,830	7,417,137	893,650	8,712,190	860,660	5,126,087	7,569,164	5,113,978	5,163,025	7,427,593	5,489,666	8,586,738	566,161
Major repairs and renewals	12,430,748	4,469,656	2,815,334	1,379,040	5,338,203	546,890	25,141,752	157,284	2,753,028	329,019	9,695,813	1,376,378	77,456,558	91,178,035
Total	54,882,757	30,395,441	40,342,454	10,675,709	45,356,207	8,751,044	54,377,096	12,746,130	43,871,073	18,348,300	47,765,917	16,183,325	164,473,812	118,139,172

Variable O&M cost - Foreign (PKR)														
Particulars	FY18		FY19		FY20		FY21		FY22		Average		Requested	
	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
Fuel additives, chemicals etc.	78,640,457	1,220,272	44,882,336	662,457	43,433,723	672,782	45,699,352	357,453	146,233,201	937,121	71,777,814	770,017	284,667,089	-
Plant maintenance	42,303,411	14,885,083	44,312,515	9,694,659	24,312,951	5,916,199	25,847,941	6,470,192	52,583,681	20,881,307	37,872,100	11,569,488	55,721,751	155,439
Gas turbines overhauls	49,950,446	113,107,846	137,732,956	5,640,072	17,650,855	67,096,695	30,816,597	54,224,662	17,178,773	13,285,278	50,865,885	50,670,911	105,932,211	6,120,754
Major repairs and renewals	291,224,739	19,216,453	17,584,558	10,793,511	32,512,919	6,268,520	65,998,564	-	19,261,474	2,020,882	85,312,451	7,659,873	273,711,181	117,592,461
Total	462,119,052	148,429,654	244,492,366	26,790,699	117,910,248	79,954,196	168,362,454	61,052,307	235,257,129	37,124,589	245,828,250	70,670,289	720,032,232	123,868,654

Total variable O&M cost (PKR)														
Particulars	FY18		FY19		FY20		FY21		FY22		Average		Requested	
	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III	EB IIC	EB III
Fuel additives, chemicals etc.	93,571,300	6,880,218	55,629,692	3,784,034	59,620,211	4,064,681	57,006,006	2,219,491	165,047,188	5,300,599	86,174,879	4,449,805	341,390,461	25,000,000
Plant maintenance	59,058,002	22,189,092	63,675,142	14,976,101	39,432,276	9,867,795	38,648,543	9,627,836	69,773,761	29,374,086	54,117,545	17,206,982	77,428,895	1,550,415
Gas turbines overhauls	60,717,021	126,068,676	145,150,093	6,533,722	26,362,845	67,957,355	35,944,684	61,793,826	22,292,751	18,448,303	58,093,479	56,160,576	114,518,949	6,686,915
Major repairs and renewals	303,655,486	23,686,110	20,379,892	12,172,551	37,851,122	6,815,410	91,140,316	157,284	22,014,502	2,349,901	95,008,264	9,036,251	351,167,738	208,770,495
Total	517,001,809	178,825,096	284,834,819	37,466,408	163,266,455	88,705,240	222,739,549	73,798,437	279,128,201	55,472,889	293,394,167	86,853,614	884,506,044	242,007,826



FIXED OPERATIONS & MAINTENANCE (FOM)

Fixed O&M cost - Local (PKR) Particulars	FY18	FY19	FY20	FY21	FY22	Average	Requested
Salaries, Wages & Benefits	268,432,479	338,901,263	331,744,932	329,675,156	380,888,508	329,928,468	303,487,356
Security Charges	9,315,603	12,775,035	14,041,991	12,268,149	15,881,680	12,856,492	15,105,697
Health & Medication	15,424,947	18,258,106	20,049,106	21,394,370	26,201,665	20,265,639	28,399,415
3rd Party Contract Services	17,761,733	24,355,623	23,575,483	20,752,207	27,656,002	22,820,210	27,592,273
Travelling	5,636,648	5,154,186	1,991,406	1,841,740	3,216,705	3,568,137	3,075,871
Motor vehicles running	9,612,341	12,301,947	13,017,926	11,404,175	15,384,573	12,344,192	11,433,227
Postage, telephone and telex	3,132,656	2,136,230	1,851,706	2,083,074	2,231,952	2,287,124	1,747,419
Legal and professional charges	68,023,456	7,441,724	8,784,544	8,294,549	11,625,894	20,834,034	13,679,356
Liquidated damages arbitration cost	1,247,361	9,982,542	18,663,173	17,769,801	1,146,238	9,761,823	-
Infomation technolgy maintenance cost	2,222,000	2,644,752	2,553,330	2,073,473	3,099,891	2,518,689	9,487,097
Auditors' remuneration	1,061,099	1,317,368	1,495,194	1,546,408	1,696,774	1,423,369	1,647,419
Printing, stationery and periodicals	3,399,801	2,645,236	2,210,032	2,215,849	2,519,826	2,598,149	2,056,903
Repairs and maintenance	-	-	-	-	-	-	-
Training expenses	3,301,867	4,606,243	2,573,569	980,589	1,765,356	2,645,525	1,647,419
Rent, rates and taxes	596,250	605,093	800,715	1,112,495	897,083	802,327	-
NEPRA fee	-	-	3,768,646	3,602,286	-	1,474,186	14,488,528
Site infrastructure maintenance & running	20,188,926	26,358,925	23,135,904	20,796,505	26,332,586	23,362,569	24,663,873
Education fee	6,148,525	6,654,408	6,675,942	5,843,930	5,863,692	6,237,299	4,832,775
Donations	-	-	2,144,996	41,019	1,635,923	764,388	2,346,129
Provision for stores obsolecence	8,667,025	-	-	-	-	1,733,405	-
Standby auxiliary consumption	-	34,006,466	48,620,396	49,783,362	43,435,841	35,169,213	88,031,859
Other expenses	21,445,909	9,879,148	8,747,249	14,550,497	14,480,219	13,820,604	11,433,227
Total	465,618,626	520,024,295	536,446,240	528,029,635	585,960,406	527,215,841	565,155,844

Fixed O&M cost - Foreign (PKR)							
Particulars	FY18	FY19	FY20	FY21	FY22	Average	Requested
Salaries, Wages & Benefits	-	-	-	-	-	-	-
Security Charges	-	-	-	-	-	-	-
Health & Medication	-	-	-	-	-	-	-
3rd Party Contract Services	-	-	-	-	-	-	-
Travelling	-	-	-	-	-	-	-
Motor vehicles running	-	-	-	-	-	-	-
Postage, telephone and telex	-	-	-	-	-	-	-
Legal and professional charges	2,304,598	3,590,630	3,551,474	3,516,387	4,191,110	3,430,840	-
Liquidated damages arbitration cost	4,989,443	39,930,170	74,652,693	71,079,205	6,012,444	39,332,791	-
Infomation technolgy maintenance cost	1,673,706	2,445,865	2,287,730	1,613,171	2,864,084	2,176,911	-
Auditors' remuneration	-	-	-	-	-	-	-
Printing, stationery and periodicals	-	-	-	-	-	-	-
Repairs and maintenance	-	-	-	-	-	-	-
Training expenses	-	-	-	-	-	-	-
Rent, rates and taxes	193,704	101,210	-	-	7,013	60,385	-
NEPRA fee	2,298,640	3,038,262	75,463	-	3,778,971	1,838,267	-
Site infrastructure maintenance & running	2,305,770	2,052,883	2,047,150	1,603,323	1,634,748	1,928,775	-
Education fee	-	-	-	-	-	-	-
Donations	-	-	-	-	-	-	-
Provision for stores obsolecence	-	-	-	-	-	-	-
Standby auxiliary consumption	-	-	-	-	-	-	-
Other expenses	-	-	-	23,467	-	4,693	-
Total	13,765,861	51,159,019	82,614,510	77,835,553	18,488,370	48,772,663	-

Total fixed O&M cost (PKR)							
Particulars	FY18	FY19	FY20	FY21	FY22	Average	Requested
Salaries, Wages & Benefits	268,432,479	338,901,263	331,744,932	329,675,156	380,888,508	329,928,468	303,487,356
Security Charges	9,315,603	12,775,035	14,041,991	12,268,149	15,881,680	12,856,492	15,105,697
Health & Medication	15,424,947	18,258,106	20,049,106	21,394,370	26,201,665	20,265,639	28,399,415
3rd Party Contract Services	17,761,733	24,355,623	23,575,483	20,752,207	27,656,002	22,820,210	27,592,273
Travelling	5,636,648	5,154,186	1,991,406	1,841,740	3,216,705	3,568,137	3,075,871
Motor vehicles running	9,612,341	12,301,947	13,017,926	11,404,175	15,384,573	12,344,192	11,433,227
Postage, telephone and telex	3,132,656	2,136,230	1,851,706	2,083,074	2,231,952	2,287,124	1,747,419
Legal and professional charges	70,328,054	11,032,354	12,336,018	11,810,936	15,817,004	24,264,873	13,679,356
Liquidated damages arbitration cost	6,236,804	49,912,713	93,315,867	88,849,006	7,158,682	49,094,614	-
Infomation technolgy maintenance cost	3,895,706	5,090,616	4,841,061	3,686,644	5,963,974	4,695,600	9,487,097
Auditors' remuneration	1,061,099	1,317,368	1,495,194	1,546,408	1,696,774	1,423,369	1,647,419
Printing, stationery and periodicals	3,399,801	2,645,236	2,210,032	2,215,849	2,519,826	2,598,149	2,056,903
Repairs and maintenance	-	-	-	-	-	-	-
Training expenses	3,301,867	4,606,243	2,573,569	980,589	1,765,356	2,645,525	1,647,419
Rent, rates and taxes	789,955	706,303	800,715	1,112,495	904,096	862,713	-
NEPRA fee	2,298,640	3,038,262	3,844,109	3,602,286	3,778,971	3,312,453	14,488,528
Site infrastructure maintenance & running	22,494,696	28,411,808	25,183,054	22,399,827	27,967,334	25,291,344	24,663,873
Education fee	6,148,525	6,654,408	6,675,942	5,843,930	5,863,692	6,237,299	4,832,775
Donations	-	-	2,144,996	41,019	1,635,923	764,388	2,346,129
Provision for stores obsolecence	8,667,025	-	-	-	-	1,733,405	-
Standby auxiliary consumption	-	34,006,466	48,620,396	49,783,362	43,435,841	35,169,213	88,031,859
Other expenses	21,445,909	9,879,148	8,747,249	14,573,964	14,480,219	13,825,298	11,433,227
Total	479,384,487	571,183,314	619,060,751	605,865,188	604,448,776	575,988,503	565,155,844

WORKING CAPITAL COST (WCC)

Fuel type		Gas			LSFO		HSD		
		EB IIC	EB III	Plant 2	EB IIC	Plant 2	EB IIC	EB III	Plant 2
Net capacity	MW	236.00	258.00	494.00	228.00	228.00	228.00	249.00	477.00
Hours per day	Hours	24.00	24.00	24.00	24.00	24.00	24.00	24.00	24.00
Base rate		18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%	18.43%
Spread over KIBOR		2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Total interest rate		20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%	20.43%
Fuel receivable:									
Days		25	25		25		25	25	
Heat rate		7,904	8,471		8,487		8,044	8,509	
Fuel price		3,749.18	3,749.18		111.05		111.05	280.75	
Amount required for 25 days on 30% load	PKR	1,258,828,840	1,474,914,938	2,733,743,778	959,791,591	959,791,591	909,709,133	2,657,185,223	3,566,894,356
GST	PKR	214,000,903	250,735,539	464,736,442	163,164,571	163,164,571	154,650,553	451,721,488	606,372,040
Total amount required	PKR	1,472,829,743	1,725,650,477	3,198,480,220	1,122,956,162	1,122,956,162	1,064,359,686	3,108,906,710	4,173,266,396
Cost of receivables	**PKR**	**300,899,117**	**352,550,392**	**653,449,509**	**229,419,944**	**229,419,944**	**217,448,684**	**635,149,641**	**852,598,325**
Inventory:									
Days		15	5		15			5	
Heat rate	KJ/kWh	8,487	8,977		8,487			8,977	
CV	KJ/Kg - KJ/Litre	40,297	35,022		40,297			35,022	
Fuel requirement for requisite number of days at 60% load	Tons/Litres	10,372	4,595,600	4,605,972	10,372	10,372		4,595,600	4,595,600
LSFO / HSD price including sales tax	PKR / Ton / Litre	129,926	281		129,926			281	
Total amount required	PKR	1,347,547,394	1,290,226,778	2,637,774,172	1,347,547,394	1,347,547,394		1,290,226,778	1,290,226,778
Cost of LSFO Inventory	**PKR**	**275,303,933**	**263,593,331**	**538,897,263**	**275,303,933**	**275,303,933**		**263,593,331**	**263,593,331**
Cost of SBLC - RLNG									
Days		30	30		30		30	30	
Amount required for 30 days on 100% load	PKR	5,035,315,362	5,899,659,750	10,934,975,112	5,035,315,362	5,035,315,362	5,035,315,362	5,899,659,750	10,934,975,112
SBLC charges		1.50%	1.50%		1.50%		1.50%	1.50%	
Cost of SBLC - RLNG	**PKR**	**75,529,730**	**88,494,896**	**164,024,627**	**75,529,730**	**75,529,730**	**75,529,730**	**88,494,896**	**164,024,627**
Cost of SBLC - LSFO / HSD									
Days		30	30		30		30	30	
Amount required for 30 days on 100% load	PKR	3,839,166,366	12,902,267,778	16,741,434,143	3,839,166,366	3,839,166,366	3,839,166,366	12,902,267,778	16,741,434,143
SBLC charges		1.50%	1.50%		1.50%		1.50%	1.50%	
Cost of SBLC - LSFO	**PKR**	**57,587,495**	**193,534,017**	**251,121,512**	**57,587,495**	**57,587,495**	**57,587,495**	**193,534,017**	**251,121,512**
Total cost of Working Capital		709,320,275	898,172,636	1,607,492,911	637,841,102	637,841,102	350,565,910	1,180,771,885	1,531,337,794

GAS (RLNG)

Kot Addu Power Company Limited - Plant 2

Reference tariff table Gas/RLNG

Year	Energy Purchase Price (PKR/kWh) - EB IIC				Energy Purchase Price (PKR/kWh) - EB III				Capacity Purchase Price (PKR/kW/Hour) @ 30%				Total tariff (PKR/kWh)	
	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fixed O&M local	Cost of W/C	ROE	Total CPP	EB IIC	EB III
1	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121
2	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121
3	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121
4	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121
5	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121
Average														
1 - 5	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121
Levelized														
1 - 5	29.6334	0.1270	0.5561	30.3166	31.7596	0.1608	0.1686	32.0890	0.4353	1.2382	3.0495	4.7231	35.0396	36.8121

LOW SULPHUR FURNANCE OIL (LSFO)

Kot Addu Power Company Limited - Plant 2

Reference tariff table (SFO)

Year	Energy Purchase Price (PKR/kWh) - EB IIC				Capacity Purchase Price (PKR/kW/Hour) @ 30%				Total tariff (PKR/kWh)
	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fixed O&M local	Cost of W/C	ROE	Total CPP	EB IIC
1	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**
2	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**
3	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**
4	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**
5	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**
Average									
1 - 5	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**
Levelized									
1 - 5	23.3867	0.2745	1.2017	**24.8629**	0.4508	1.0645	3.1582	**4.6736**	**29.5365**

HIGH SPEED DIESEL (HSD)

Kot Addu Power Company Limited - Plant 2

Reference tariff table HSD

Year	Energy Purchase Price (PKR/kWh) - EB IIC				Energy Purchase Price (PKR/kWh) - EB III				Capacity Purchase Price (PKR/kW/Hour) @ 30%				Total tariff (PKR/kWh)	
	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fuel	Var. O&M local	Var. O&M foreign	Total EPP	Fixed O&M local	Cost of W/C	ROE	Total CPP	EB IIC	EB III
1	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184
2	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184
3	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184
4	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184
5	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184
Average														
1 - 5	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184
Levelized														
1 - 5	68.0322	0.1521	0.6657	68.8500	71.9708	0.2524	0.2646	72.4878	0.4508	1.2216	3.1582	4.8306	73.6807	77.3184

SWITCHYARD FACILITY CHARGES

Tariff petition model - Switchyard
Energy Transformation Charges

Description	Nameplate capacity	Dependable capacity	No load losses	Load losses	Utilization	Annual losses	
	MVA	MVA	KW	KW	%	kWh	PKR
Auto -T-6	200.0	200.0	41.0	313.0	0.7	1,919,316.0	66,369,947.3
Auto -T-5	100.0	100.0	38.0	205.0	0.7	1,257,060.0	43,469,134.8
Auto T-1&2	200.0	100.0	38.0	205.0	0.7	1,257,060.0	43,469,134.8
Total Losses	**500.0**	**400.0**		**723.0**		**4,433,436.0**	**153,308,216.9**

Base rate	34.58

KOT ADDU POWER COMPANY LIMITED

Tariff petition model - Switchyard
Fixed O&M

Local

Amount in PKR.

Particulars	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	Total	Average of 5 years
Salaries, wages and benefits	71,315,270	82,444,764	79,678,356	88,724,767	94,485,621	93,385,757	93,385,757	93,385,757	93,385,757	93,385,757	466,928,784	93,385,757
Third Party Contract Services	3,338,750	4,256,807	4,058,973	3,905,738	4,940,347	5,850,000	5,850,000	5,850,000	5,850,000	5,850,000	29,250,000	5,850,000
Security & Health	6,167,070	7,074,357	7,833,476	8,687,917	10,120,244	12,193,061	12,193,061	12,193,061	12,193,061	12,193,061	60,965,305	12,193,061
Other FOM Costs	34,350,732	18,765,231	17,311,387	18,158,100	22,883,479	24,884,295	24,884,295	24,884,295	24,884,295	24,884,295	124,421,477	24,884,295
Auxiliary	-	841,746	1,189,358	1,352,091	1,094,627	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	15,000,000	3,000,000
Plant maintenance	3,310,465	3,632,996	2,817,709	2,078,242	2,201,366	2,945,000	2,945,000	2,945,000	2,945,000	2,945,000	14,725,000	2,945,000
Major repairs and renewals	11,212,934	-	21,175,693	-	1,697,905	-	-	42,000,000	-	-	42,000,000	8,400,000
Total	129,695,220.9	117,015,901.0	134,064,952.9	122,906,855.7	137,423,590.3	142,258,113	142,258,113	184,258,113	142,258,113	142,258,113	753,290,566	150,658,113

Foreign

Particulars	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	Total	Average of 5 years
Plant maintenance	4,965,698	5,449,493	4,226,564	3,117,364	5,136,522	15,415,887	13,349,758	12,714,510	13,316,521	11,532,302	66,328,977	13,265,795
Major repairs and renewals	2,658,464	11,908,526	2,202,324	212,006,608	59,085,840	53,247,695	153,356,107	606,585,216	38,261,998	59,443,227	910,894,242	182,178,848
Total	7,624,161.8	17,358,019.4	6,428,887.8	215,123,971.6	64,222,361.6	68,663,582	166,705,865	619,299,726	51,578,519	70,975,528	977,223,219	195,444,644

Kot Addu Power Company Limited - Switchyard

Tariff petition model - Switchyard

Year	Energy transformation expenses	Fixed O&M local	Fixed O&M foreign	ROE	Total	Fixed O&M local	Fixed O&M foreign	ROE	Total
	PKR / kWh	PKR / kWh				PKR / kWh			
1	0.0512	0.0503	0.0652	0.1848	**0.3515**	36.7101	47.6230	134.9250	**219.2580**
2	0.0512	0.0503	0.0652	0.1848	**0.3515**	36.7101	47.6230	134.9250	**219.2580**
3	0.0512	0.0503	0.0652	0.1848	**0.3515**	36.7101	47.6230	134.9250	**219.2580**
4	0.0512	0.0503	0.0652	0.1848	**0.3515**	36.7101	47.6230	134.9250	**219.2580**
5	0.0512	0.0503	0.0652	0.1848	**0.3515**	36.7101	47.6230	134.9250	**219.2580**
Average									
1 - 5	**0.0512**	**0.0503**	**0.0652**	**0.1848**	**0.3515**	**36.7101**	**47.6230**	**134.9250**	**219.2580**
Levelized									
1 - 5	**0.0512**	**0.0503**	**0.0652**	**0.1848**	**0.3515**	**36.7101**	**47.6230**	**134.9250**	**219.2580**

Note: For the purpose of this tariff, insurance cost is considered as pass through.

Raj, A-Aley

KOT ADDU POWER COMPANY LIMITED

ANNEXURE V

AUDITED FINANCIAL STATEMENTS