

JAMSHORO POWER COMPANY LIMITED

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Office of the Chief Executive Officer

No. CE/PIUM/CFPP/PIU/ 37

January 24, 2023

THE REGISTRAR National Electric Power Regulatory Authority, NEPRA Tower Attaturk Avenue (East), Sector G-5/1, Islamabad, Pakistan. ("NEPRA")

SUBJECT: <u>APPLICATION FOR REFERENCE GENERATION TARIFF FOR 660 MW (GROSS ISO)</u> COAL FIRED POWER PROJECT, JAMSHORO POWER COMPANY LIMITED

I, TANZIL RAHIM holding CNIC No. 43104-0567035-7, the Chief Executive Officer of Jamshoro Power Company Limited (the "**Company**") being the duly authorized representative of the Company by virtue of the resolution of the Board of Directors of the Company held on September 20, 2022, hereby apply to the National Electric Power Regulatory Authority, pursuant to Section 17(3) of NEPRA Tariff Standards and Procedure Rules, 1998 (the "**NEPRA Rules**"), for the determination of the Reference Generation Tariff for the Company's 660 MW (Gross ISO) coal fired power generation facility located on the site of its existing power generation complex at Jamshoro, Province of Sindh, Pakistan.

I hereby certify that the documents-in-support attached with this application for the Reference Generation Tariff have been prepared and are being submitted in conformity with the provisions of the NEPRA Rules. I undertake and confirm, for and on behalf of the Company, that the information provided in the attached documents-in-support is true and correct to the best of my knowledge and belief. Additionally, please note that the '*Partial Load Curves v/s Heat Rate (Correction Factors)* & *Degradation due to aging v/s Heat Rate (Correction Factors)*', as required in '*Form 7 - Technical Assumptions*' of Forms 1 to 15 as per NEPRA's S.R.O. 374 (1)/2019, dated March 15, 2019, are to be made available by the EPC Contractor and therefore, the Company is unable to submit the same with this application. However, as soon as the necessary data is received by the Company from the EPC Contractor, the Company will immeditaely submit it to NEPRA in connection with this application.

A bank draft (No. BBB 14780921) in the sum of PKR 1,869,444/- (Pakistani Rupees One Million Eight Hundred and Sixty-Nine Thousand and Forty-Four only), being the non-refundable tariff determination fee calculated in accordance with the National Electric Power Regulatory Authority (Fees Pertaining to Tariff Standards and Procedure) Regulations, 2002, was already submitted to NEPRA and such was received by NEPRA office on 03.11.2022.

Sincerely, For and on behalf of Jamshoro Power Company Limited

REGISTEAR

Diary No Date:____

NAME: TANŹIL RAHIM DESIGNATION: CHIEF EXECUTIVE OFFICER

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11/25/0//23 CC:- Chaniman MM (Tech)

BEFORE THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

TARIFF PETITION

PURSUANT TO NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (TARIFF STANDARDS AND PROCEDURE RULES), 1998 (AS AMENDED AND MODIFIED FROM TIME TO TIME) READ WITH THE PROVISIONS OF THE REGULATION FOR GENERATION, TRANSMISSION AND DISTRIBUTION OF ELECTRIC POWER ACT, 1997 (AS AMENDED AND MODIFIED FROM TIME TO TIME) & THE RULES AND REGULATIONS MADE THEREUNDER

ON BEHALF OF

JAMSHORO POWER COMPANY LIMITED

FOR NEPRA'S APPROVAL OF REFERENCE GENERATION TARIFF FOR JAMSHORO POWER COMPANY LIMITED FOR A 660MW (GROSS ISO) COAL FIRED POWER PROJECT AT JAMSHORO, PROVINCE OF SINDH, PAKISTAN

DATED: January 25, 2023

JAMSHORO POWER COMPANY LIMITED

WAPDA HOUSE, SHAHRAH-E-QUAID-E-AZAM,

Lahore, Pakistan.

TEL: 022-9213706

FAX: 022-9213708



COPY OF JAMSHORO POWER COMPANY LIMITED'S BOARD RESOLUTION





JAMSHORO POWER COMPANY LIMITED

Mohra Jabal, Dadu Rond, Jamshoro Phone: 022-9213746 Fax: No.022-9213739 Email: <u>cs.jamshoro@gmail.com</u> Web: <u>www.jpcl.com.pk</u>



No. JPCL (8:2022/BOD-144 1069

10.10.2022

THE EXECUTIVE OFFICER

JPCL, Jamshoro

Subject:

EXTRACT FROM THE DRAFT MINUTES OF 144TH MEETING OF THE BOARD OF DIRECTORS; AGENDA FIEM NO. 16.4: TO AUTHORIZE AND EMPOWER MR. TANZIL RAHIM CHIEF EXECUTIVE OFFICER & PROJECT DIRECTOR JAMSHORO COAL FIRED POWER PROJECT ON BEHALF OF JPCL TO ADDRESS, PERFORM, NEGOTIATE, DECIDE, EXECUTE, IMPLEMENT AND/OR UNDERTAKE ALL MATTERS OF ANY NATURE WHATSOEVER IN RELATION TO THE TARIEF PETITION IN RESPECT OF LOT-1 OF 2X660 MW JAMSHORO (DAL POWER PROJECT

The Board of Directors, JPCL considered the subject agenda in its 1.14th meeting held or September 20, 2022 and resolved as under:

RESOLVED THAT Jamshoro Power Company Limited (a public limited company duly established and existing under the laws of Pakistan with its registered office located at its registered WAPDA House, Shahrah-e-Quaid-e-Azam, Lahore, Pakistan, and its electric power generation complex located at Jamshoro, Province of Sindh, Pakistan;

FURTHER RESOLVED THAT JPCL be And is Hereby Authorized to prepare, finalize, deliver, file, apply, and submit, pursuant to the applicable laws of Pakistan, including the 'Regulation of Generation, Transmission and Distribution of Electric Pawer Act, 1997' (the "NEPRA Act") and the rules and regulations made thereunder, a petition (together with all documents attached thereto) before the national electric power regulatory authority (the "Authority") for the Authority's approval of the EPC Stage Tariff Petition for a 2x 660MW (Gross) Coal Fired Power Project At Jamshoro, Province Of Sindh, Pakistan (the "Tariff Petition") and to, inter alia, 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;

FURTHER RESOLVED THAT, in respect of the matters relating to the "Tariff Petition", Mr. Tanzil Rahim CNIC No 43104-0567035-7 and Mr. Mahesh Kumar Dawani (being the Project Director Jamshoro Coal Fired Power Project of the Company and having CNIC No. 43103-7419034-1 be and are hereby [singly/jointly] appointed as authorized representatives of the Company and are hereby authorized and empowered for and on behalf of the Company, as the Company duly appointed authorized representatives, to address, perform, negotiate, decide, execute, implement and/or 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, 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:



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- it: 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, 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);
- iii. sign, execute and deliver, for ²and on behalf of the Company, all necessary documentation lincluding 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, 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 approval of the Tariff Petition, by the Authority;
- iv. further sub-delegate any or all of the aforementioned powers and authorities to one or more officers of the Company or any other person or persons, singly and/or jointly; and
- *v*: do all such acts, deeds and things as may be necessary for carrying out the purposes aforeshild and give full effect to the above resolutions.
- 2. Detailed discussion is contained in the minutes of 144th meeting of Board of Directors.

The above is submitted for information, record and necessary action please

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Company Secretary JPC1 &



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AFFIDAVITS OF AUTHORIZED REPRESENTATIVES OF JAMSHORO POWER COMPANY LIMITED

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BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY



IN THE MATTER OF A 660MW (GROSS ISO) COAL FIRED POWER PROJECT AT JAMSHORO, PROVINCE OF SINDH, PAKISTAN

AFFIDAVIT

of Mr. Tanzil Rahim, son of Ghulam Sarwar Koondher, resident of House No. B-15, JPCL Colony, Jamshoro, duly authorized representative of Jamshoro Power Company Limited, through a board resolution dated September 20, 2022, hereby declares, and affirms on oath as under:

- That the accompanying Tariff Petition has been filed before the National Electric Power Regulatory 1. Authority and the contents of the same may kindly be read as an integral part of this affidavit.
- That the contents of the accompanying Tariff Petition are true and correct to the best of my 2. knowledge and belief and nothing has been concealed or mis-stated therein.

Deponent

Verification

Verified on oath at $\frac{JqmShoro}{January}$, Pakistan on this $\frac{24h}{2023}$ day of $\frac{January}{2023}$, that the contents of the above affidavit are true and correct to the best of my knowledge and belief.

Deponent



MUNEER AHMED Stamp Vendor Distt: Jamshoro Kotri

BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY



IN THE MATTER OF A 660MW (GROSS ISO) COAL FIRED POWER PROJECT AT JAMSHORO, PROVINCE OF SINDH, PAKISTAN

<u>Affidavit</u>

of Mr. Mahesh Kumar, son of Nihchal Das resident of Muhallah Dawani Kandhkot, District Kashmore, duly authorized representative of Jamshoro Power Company Limited, through a board resolution dated September 20, 2022, hereby declares, and affirms on oath as under:

1. That the accompanying Tariff Petition has been filed before the National Electric Power Regulatory Authority and the contents of the same may kindly be read as an integral part of this affidavit.

2. That the contents of the accompanying Tariff Petition are true and correct to the best of my knowledge and belief and nothing has been concealed or mis-stated therein.

Deponent

Verification

Pakistan on this_24/k-Jamshow Verified on oath at day of January 2023, that the contents of the above affidavit are true and correct to the best of my knowledge and belief. teo

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TABLE OF CONTENTS

Сору	of Jamshoro Power Company Limited's Board Resolution	3
1	DETAILS OF THE PETITIONER	12
2	REGULATORY FRAMEWORK LEADING TO TARIFF PETITION	13
2.2	Process Leading to Tariff Petition	13
2.2.1	Project Feasibility Study	13
2.2.2	Request for Determination of Tariff	13
2.2.3	Submission	14
3	EXECUTIVE SUMMARY	16
31	Project Brief	
3.2	FPC Approach & O&M Arrangement	16
321	ADB Procurement Guidelines	
3.2.2	Status of Lot-I of the Project	
3.2.3	Construction Period Timeline	17
3.3	EPC -O&M Bidding Process	19
3.4	Fuel Supply Arrangements	19
3.5	Project Funding	20
3.6	Salient Features of the Project	20
Detai	ls of Plant Technology/ Main Features of the Project	23
3.7	Key Features of the Project	24
3.7.1	The Project Site	24
3.7.2	Financing Terms	24
3.7.3	Selection of Technology	25
4	PROJECT COST, OPERATING COST AND TARIFF	26
4.1	Project Cost Summary	26
4.2	Details of Project Cost	26
4.2.1	EPC Cost	26
4.2.2	Non-EPC Cost	27
4.2.3	Interest During Construction	29
4.2.4	Permanent Working Capital	29
4.3	Project Funding Structure (Debt & Equity)	31
4.3.1	The Funding Plan	31
4.3.2	Brief on Debt and Equity Financing	31
4.3.3	Return on Equity	31
4.3.4	Debt Servicing	31
4.4	Fuel Cost	32
4.5	Costs of Ash Disposal, Limestone & Ammonia	33
4.6	Operating Costs	33
4.6.1	Breakup of Operating Cost	
4.6.2	Understanding & Benchmarks for O&M Contract	
4.6.3	Insurance During Operation Period	
4.7	Reference Generation Tariff & Debt Schedule	
4.7.1	Tariff Control Period	
4.7.2	Summary of Reference Generation Tariff	
4.7.3	Reference Generation Tariff Table	
4.7.4	Debt Repayment Schedule	
4.8	Start-up Charge	
4.9	Indexations, Escalations and Cost Adjustment	
4.9.1	Indexations	4U 1
4.9.2	Une I ime Adjustments	41 1
4.9.3	Pass- I hrough Items	++
4.9.4		
Э	SUBMISSION	



LIST OF ANNEXURES

А	Project Feasibility Study
В	Land Allocation Documents
С	IGCEP 2021-30
D	EPA Study & Approval
E	EPC Contract
F	Financing Agreements
G	Operation & Maintenance Contract
Н	Generation License
I	Start-up Charges
J	Forms 1 to 15 as per S.R.O. 374 (1)/2019 dated March 15, 2019
J-i	The process of selection and hiring of consultants has been provided along with the relevant agreements
J-ii	Details of the selection process of EPC Contractor / O&M Contractor including EOIs and RFPs
J-iii	The Heat Balance Diagrams



1 DETAILS OF THE PETITIONER

NAME AND ADDRESS

JAMSHORO POWER COMPANY LIMITED WAPDA HOUSE, SHAHRAH-E-QUAID-E-AZAM, LAHORE, PAKISTAN

TEL: 022-9213706

FAX: 022-9213708

AUTHORISED REPRESENTATIVES

MR. TANZIL RAHIM Authorized Representative, Jamshoro Power Company Limited

MR. MAHESH KUMAR DAWANI Authorized Representative, Jamshoro Power Company Limited



Page 12 of 42

2 **REGULATORY FRAMEWORK LEADING TO TARIFF PETITION**

2.1 NATIONAL ELECTRIC POWER REGULATORY AUTHORITY – COMPETENT AUTHORITY FOR TARIFF DETERMINATION

2.1.1 NEPRA Act, NEPRA Rules

Under the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (including any amendment thereto or re-enactment thereof) (the "NEPRA Act"), the National Electric Power Regulatory Authority (the "Authority" or "NEPRA") is responsible for, *inter olia*, determining tariffs and other terms and conditions for the supply or provision of electric power services through generation, transmission, and distribution. NEPRA is also responsible for determining the process and procedures for reviewing tariffs and recommending tariff adjustments. Further, pursuant to the enabling provisions of the NEPRA Act, the procedure for tariff determination has been prescribed in the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998 (as amended or modified from time to time) (the "NEPRA Rules").

2.2 PROCESS LEADING TO TARIFF PETITION

2.2.1 Project Feasibility Study

The detailed feasibility for the Project (as defined in Section 3.1.2 below) has been completed by US Power Consult LLC as of September 2013 (the "**Project Feasibility Study**"), and the PC-1 has also been compiled and approved by ECNEC on April 18, 2014 (attached as "ANNEXURE A").

The Feasibility Stage Tariff Determination was issued by NEPRA on July 6, 2015, *vide* Ref. No. NEPRA/TRF-288/JPCL-2014/10158-10160 (hereinafter referred as "Feasibility Stage Tariff").

2.2.2 Request for Determination of Tariff

The Project Company has:

- (a) land that is already owned by the Project Company and 100 acres of land purchased for ash pond has not been taken over by the Project Company, yet. The land allocation documents for the same have been attached as "ANNEXURE B";
- (b) received recognition in the IGCEP 2021-30, as reflected in the attached as "ANNEXURE C";
- (c) obtained the applicable environmental approvals under the Environmental Impact Assessment Report, prepared by M/s Hagler Bailly Pakistan (Pvt.) Ltd, in respect of



the Project from the Sindh Environment Protection Agency *vide* letter No. 2013/12/17/EIA/45/ dated March 10, 2014 (attached as "ANNEXURE D");

- (d) executed binding contract in respect of engineering, procurement and construction works for the Project with renowned contractors from Siemens-HEl Consortium (attached as "ANNEXURE E");
- (e) signed the Financing Agreements with the Asian Development Bank ("ADB" or "Lender"), as highlighted in the narrative below, that reflect the finalized financing arrangement of the Project (attached as "ANNEXURE F");
- (f) signed an Operation and Maintenance Contract with Siemens-HEI Consortium (attached as "ANNEXURE G"); and
- (g) been granted a Generation License No. GL/01/2002 by NEPRA (the "Generation License") (attached as "ANNEXURE H"). The Generation License was issued vide NEPRA's determination dated July 1, 2002, bearing reference no. LAG 02/3585-86, which sets out the terms and conditions of the Generation License that were subsequently modified by NEPRA through its following decisions: (i) Determination dated April 16, 2014, bearing ref no. NEPRA/R/LAG-02/3885-91 in the matter of Modification-I in Generation License, (ii) Determination dated August 11, 2014, bearing ref. no. NEPRA/R/LAG-02/9463-9469 in the matter of Modification-II in Generation License, (iii) Determination dated February 13, 2020, bearing ref. no. NEPRA/R/LAG-02/5256-61 in the matter of Modification-III in Generation License; and (iv) Determination dated October 1, 2020, bearing ref. no. NEPRA/R/LAG-02/33778-83 in the matter of Modification-IV in Generation License.

Accordingly, it is submitted that the requirements for applying to NEPRA for a cost-plus tariff determination for the Project, under the relevant provisions of the NEPRA Rules together, with the provisions of the NEPRA Act and the rules and regulations made thereunder, have been completed.

2.2.3 Submission

In view of compliance of the foregoing, the Project Company <u>submits herewith</u> before NEPRA, for its perusal, a "Tariff Petition" for approval of:

- (i) the reference generation tariff (the "**Reference Generation Tariff**")in respect of the Project;
- (ii) the indexations and escalations;
- (iii) the adjustments at commercial operations date (the "Commercial Operations Date" or "COD"); and



(iv) other matters set out in this Tariff Petition.

Given the advanced stage of the Project, NEPRA is kindly requested to process the Tariff Petition at the earliest, thereby enabling the Project Company to start generation on or before COD.

The tariff to be determined by the Authority will be incorporated in the Power Purchase Agreement ("**PPA**") to be entered between Jamshoro Power Company Limited as the seller, Central Power Purchasing Agency (Guarantee) Limited (the "**CPPA-G**") as the power purchaser and National Transmission & Despatch Company as the transmission services provider.

All requisite information required by NEPRA for processing the Tariff Petition has been annexed herewith. The Project Company will be pleased to submit any further information as and when required by NEPRA in connection with the determination.



3 EXECUTIVE SUMMARY

3.1 PROJECT BRIEF

- **3.1.1** The applicant, Jamshoro Power Company Limited (the "**Project Company**"), is a public limited company incorporated under the laws of Pakistan and has been specifically established to undertake power generation business and activities in Pakistan.
- **3.1.2** The Project Company initially proposed to design, engineer, construct, insure, finance, commission, operate and maintain a project of 2 units of 660 MW each comprising of Lot I and Lot II and obtained the Generation License from NEPRA in this regard. However, the engineering, procurement and construction contract for Lot II was not signed due to the non-availability of foreign financing because of the pending decision of Government of Pakistan (through its Ministry of Energy (Power Division)) regarding the status of Lot II. Hence, through this Tariff Petition, the Project Company is seeking NEPRA's approval of the Reference Generation Tariff for the design, engineering, construction, insurance, financing, commissioning, operations, and maintenance of Lot-I of the project constituting of a 660 MW coal fired power generation facility (the "**Project**" or "**Facility**", as the context so requires) to be located on the site of its existing power generation complex at Jamshoro, Province of Sindh, Pakistan (the "**Site**"). With regards to Lot II, the Project Company shall submit a separate tariff petition before NEPRA after achieving the necessary milestones.
- **3.1.3** The main objective of the Project is to add capacity with highly efficient and environmentally friendly technology resulting in redress of the fuel mix and reduction in cost of power supply, thereby reducing the bulk tariff and circular debt. The Project proposes to provide adequate facilities for generation, transmission, and distribution of electrical power to meet the future power requirements for the domestic, commercial, industrial, and agricultural sectors, and support the overall economic development of the country.
- **3.1.4** For purposes of the Project, the Site is already owned by the Project Company, however, 100 acres of land to be purchased for ash pond have yet to be taken over by the Project Company.
- **3.1.5** In view of the foregoing, we continued with our development activities on the Site and the various milestones were completed as detailed in paragraph 2.2.2 above.

3.2 EPC APPROACH & O&M ARRANGEMENT

3.2.1 The Project Company followed the ADB Procurement Guidelines 2013 for the procurement of EPC -O&M Contract, from bidding to contract signing, and a *two-stage bidding process* was adopted. Siemens-HEI Consortium succeeded as the lowest evaluated bidder after a multistage bidding process. The Project Company has thus executed a binding ("EPC Contract") in respect of engineering procurement and construction ("EPC") works for the Project with M/s. Siemens-HEI Consortium on March 29, 2018, as their ("EPC Contractor") and the Notice to Proceed ("NTP") was issued on June 28, 2018, to the same. The Project Company also executed a 5-year Operation & Maintenance Contract ("O&M Contract") for the Project with M/s. Siemens-HEI Consortium on March 29, 2018, as their ("O&M Contract").



	Description	Financer	Lowest Evaluated Bid USS In Million
Lot-I	Unit # 1 (660 MW) plus common facilities of both units	ADB	562
Lot-II	Unit # 2 (660 MW) plus extension of common facilities	MoU signed with Arab Coordination Group on 22.11.2019. The financing is not available as of now.	303
Lot-III	5 years O&M for both units (1320 MW)		88

3.2.2 Status of Lot-I of the Project

- EPC Contract for Lot-I was signed on March 29, 2018.
- NTP was issued on June 28, 2018.
- Completion period : 60 months from NTP
- Contractual COD : December 27, 2021
- Tentative COD : November 30, 2023
- Current progress of Lot-I: 90 % (overall completion)
- Payments/ disbursement to EPC Contractor: US\$ 410.001 million
- Payments/ disbursement to the consultant: US\$ 14.402 million

3.2.3 Construction Period Timeline

As per the contractual arrangement between the Project Company and EPC Contractor, the EPC Contractor was to attain the provisional taking over of the plant within 42 months of the Fulfillment Date¹, as defined under the EPC Contract, however, the completion could not be achieved thereof. The construction work of the Project is currently ongoing, and the COD is expected to be achieved on November 30, 2023. The delay in the timeline of the construction period was caused due to the following causes that were inherently outside the control of the Project Company.

To give Site possession to the EPC Contractor, the CMS gas station (the "Gas Station") of existing units of the Project Company were required to be relocated outside the area of the

¹ "Fulfillment Date" means the date specified in Article 11 (Coming into Effect and Fulfillment Date) of the EPC Contract. The Fulfilment Date shall be the date that is 28 days from and after the date of the execution of the Contract, or, if the Contractor requests an Advance Payment and submits and Advance Payment Bond in accordance with paragraph (1) of Article 8.1 (Advance Payment Bond), then the Fulfilment Date shall be the date that the Owner pays the Advance Payment to the Contractor. On the Fulfilment Date, the Owner shall give to the Contractor a written notice to commence and proceed with the performance of the Works.



Project and the same was timely conveyed to Sui Southern Gas Company Limited ("SSGCL"), Karachi. To proceed further, there was an abundance of correspondence between the Project Company and SSGCL whereby, the Project Company fully cooperated with SSGCL for all relevant requisites and communications. As per the communication, the Gas Station was to be relocated in June 2018, however, the actual relocation for the same was achieved in March 2020 which resulted in a delay in the construction period of the Project.

Furthermore, there was a delay in the payment and reimbursement of the taxes and duties to the EPC Contractor incurred and as a result the government guarantee for local financing was not available to the Project Company, which in turn adversely affected the construction progress of the Project. Moreover, after the completion of basic design, 500KV switchyard design review and equipment/material selection were referred to the National Transmission & Despatch Company, however, due to the delay in the progress milestone, the overall construction timeline of the Project was affected and delayed. It is also highlighted that due to the COVID-19 outbreak, the construction and design works of the Project slowed down considerably which further delayed the COD of the Project.

3.3 EPC -O&M BIDDING PROCESS

EPC Selection Guidelines prescribe the procedure for the determination for an EPC price through a *two-stage bidding process*. A chronology of events in this regard is as follows:

TIMELINE	
Notice to Inviting Tenders	07.05.2016
Opening of First Technical Proposal	26.08.2016
Clarification Meeting	13.12.2016 to 19.12.2016
Bid Evaluation Report (ADB Approval)	11.04.2017
Invitation of Final Technical Proposal	17.04.2017
Opening of Final Technical Proposal	01.06.2017
Clarification Meeting	07.05.2017 to 10.05.2017
Bid Evaluation Report (ADB Approval)	10.08.2017



Invitation of Financial Proposal	23.08.2017
Opening of Financial Proposal	22.09.2017
Bid Evaluation Report (ADB Approval)	10.11.2017
Approvals from Authority	20.01.2018
Signing of the Contract	29.03.2018
Notice to Proceed	28.06.2018

3.4 FUEL SUPPLY ARRANGEMENTS

3.4.1 The Project has per annum requirement for coal, expected as follows:

- i. Scenario A- 1.7 million tons under 100% imported sub-bituminous use; or
- ii. Scenario B- 2.1 million tons under blended use 80% imported sub-bituminous & 20% domestic Thar lignite
- 3.4.2 To comply with this requirement, the following arrangements are in process:
 - i. The Project Company has already signed an MoU with Sindh Engro Coal Mining Company ("SECMC") for the supply of Thar lignite. The draft contract has also been shared by SECMC.
 - ii. The Project Company is undertaking a competitive bidding, in order to secure coal supply from various international sources.
 - iii. The Project Company signed an Inland Coal Supply Agreement with Pakistan Railway Freight Transportation Company (PRFTC) on September 8, 2018, for rail transportation of imported coal from Karachi to the Project Site.
 - iv. The Project Company has signed the Port Handling Services Agreement with Pakistan International Bulk Terminal at Port Qasim, Karachi ("PIBT").
 - v. The Project Company has signed the contract for road transportation of imported coal from PIBT to Marshaling Yard Pipri/ Coal Loadout Station with National Logistics Cell.
- 3.4.3 In respect of the Project's gas and HSD requirements, the following steps have been taken:
 - i. The Gas Supply Agreement is to be signed with SSGCL and the matter is under process.

ii. Draft agreement for supply of HSD has been submitted by Pakistan State Oil Company Limited ("**PSO**"). The comments have been conveyed by the Project Company and PSO's response is awaited. The agreement is expected to be signed by end of February 2023.

3.5 PROJECT FUNDING

The capital structure of the Project is envisaged at approximately 86.24: 13.76. (debt: equity). The Project Company obtained debt from ADB under two loans ("ADB Loan 3090" and "ADB Loan 3092") (collectively referred as the "Loans") and has executed loan financing agreements (the "Loan Agreements") valuing US\$ 840 million (ADB Loan 3090) & US\$ 24.81 million (ADB Loan 3092 – SDR 19.380 @ 1.28 SDR/USD). The ADB loan 3090 has been rescheduled to US\$ 690 million and finally to US\$ 658 million by the ADB.

Furthermore, a subsidiary loan agreement has been duly authorized, executed, and delivered on behalf of the Government of Pakistan (the "Government of Pakistan" or "GOP") and the Project Company (the "Subsidiary Loan Agreement"), under which the GOP will relend the proceeds of the Loans to the Project Company.

(The Loan Agreements and the Subsidiary Loan Agreement are together referred as the "Financing Agreements").

Based on the assumed exchange rate, the total loan amount to be disbursed is US\$ 709.58 million (including interest during construction and commitment charges) as follows:

a) ADB Loan 3090: US\$ 674.52 million

b) ADB Loan 3092: US\$ 35.05 million

Approximately, 13.76% of the equity required for the Project is to be funded by the Government of Pakistan or the Project Company itself.

3.6 SALIENT FEATURES OF THE PROJECT

Subject to the assumptions contained in this Tariff Petition, please find below a summary of the Project for NEPRA's consideration:

PROJECT COMPANY	Jamshoro Power Company Limited	
MAIN SPONSOR	Government of Pakistan	
PROJECT CAPACITY	660 MW	
PROJECT LOCATION	Jamshoro, province of Sindh, Pakistan	
LAND AREA	189 acres plus 100 acres for ash disposal	
Concession	30 years from Commercial Operations Date	
Period	CONTRACTOR CONTRACTOR	

Power Purchaser	Central Power Purchasing Agency (Guarantee) Limited			
ENERGY PRODUCTION	4,668,642 MWh/year (annual generation of the plant)			
CAPACITY UTILIZATION FACTOR	85%			
PROJECT CAPITAL			Amount (US\$)	
COST	EPC Price		545,253,550	
·	Non-EPC Cost		141,860,963	
	Interest During Co	onstruction	126,791,729	
	Commiunent Fee		8,342,994	
	Total Project Cos	st	822,749,215	
FUNDING PLAN	Debt 86.24%: Equity 13.76%			
EQUITY	US\$ 113,170,525			
LONG TERM DEBT	US\$ 709,578,690			
Lender	Asian Development Bank			
TERMS OF	ADB Loan 3090			
LONG-TERM DEBT	Currency United States Dollars			
	Term	Term 30 years		
	Grace Period 5 years			
	Repayment25 yearsPeriod			
	DebtAs per the Debt Repayment ScheduleRepayment			
	Interest Rate Base Rate: 6 month LIBOR			
	Spread: 4.5%			
	Borrowing cost as per Subsidiary Loan Agreement			
	ADB Loan 3092			
	Currency United States Dollars			
	Term	25 years		
	Grace Period	Up to 5 ye	ars for construction	



	Repayment Period		20 years				
	Debt Repayment		As per the Debt Repayment Schedule				
	Interest Rat	e	Ra	te: 15%			
O&M CONTRACTOR	Siemens-HEI	Conse	ortiu	n			
PROJECT						Am	ount (US\$)
OPERATION COST	Years				01 – 3	0	
	Variable O&M Foreign	1 -			2,300,0	000	
	Variable O&N Local	1 -		· .	1,398,4	28	
-	Years		01	02	03	04	05-30
	Fixed O&M -Foreign	10,137	7,067	11,629,757	10,015,343	12,049,930	13,950,540
	Years				01 – 30		
	Fixed O&M - Local				5,295,897		
	Insurance Cost	3,683,775					
LEVELIZED TARIFF	Scenario A: 100% sub-bituminous (imported)						
	• US Cent	• US Cents/kWh: 0.1242					
	PK Rupe	ees/kV	Vh: 2	27.11			
-	Scenario B: 80:20 blend, 80% sub-bituminous (imported) and 20% Thar lignite						
	• US Cent	s/kWł	n: 0.1	1242			
	• PK Rupees/kWh: 27.10						
Concession Documents	Power Purchase Agreement						
LEGAL ADVISORS	Haidermota & Co.						
TECHNICAL Consultants	Project Implementation Consultant (PIC) M/s Mott MacDonald (UK) in Joint Venture with MM Pakistan (Ltd.) (PAK) hired in 2015.						
MILESTONES	Loan Agreen	Loan Agreements signed with ADB for the 12.02.2014					



Page 22 of 42

ACHIEVED BY THE	Project Cost	
Project	Financial closing occurred	12.02.2014
	Generation License granted by NEPRA	11.08.2014
	Subsidiary Loan Agreement executed between the GOP and the Project Company	12.08.2014
	Construction start occurred	28.06.2018

DETAILS OF PLANT TECHNOLOGY/ MAIN FEATURES OF THE PROJECT				
Type of Steam Generator	Supercritical pulverized fuel, once through			
Steam Generator Manufacturer	Harbin Boiler Company China			
Capacity of Steam Generator	2076.61 ton/hr @ boiler maximum continuous rating,			
	1871.65 ton/hr @ turbine maximum continuous rating			
Type of Steam Turbine	Tandem Compound, condensing			
Generator Capacity	660MW (gross), 27.5kV, 50 Hz			
Power Factor	(PF): 0.8 Tertiary: 11 kV			
Steam Turbine Generator	Siemens AG Germany			
Environment Mitigation	Electrostatic Precipitator (ESP)			
	Flue Gas Desulphurization (FGD)			
	Selective Catalytic Reduction (SCR)			
Carbon Capture Ready	Plant design with provisions for incorporating			
Fuel Used	i) 100% sub-bituminous coal when lignite is not available.			
	ii) Blended coal with 20% lignite and 80% sub- bituminous coal.			
Calorific Value of Coal	Minimum imported coal 5300 Kcal/kg			



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Maximum imported coal	5700 Kcal/kg
Performance coal	5500 Kcal/kg
Worst coal	4289 Kcal/kg
Minimum Thar lignite coal	2838 Kcal/kg
 Maximum Thar lignite coal	3352 Kcal/kg

3.7 KEY FEATURES OF THE PROJECT

3.7.1 The Project Site

The Project Site is located in Jamshoro, Sindh. The geographical coordinates of the Project are as follows:



3.7.2 Financing Terms

a) Loan Agreements

The ADB Loan 3090 secured through ADB, namely "OCR Loan 1", amounts to US\$ 840 million with a grace period of 5 years, a biannual repayment period of 25 years, commitment charges of 0.15% per annum, and a financing rate of 6 Months LIBOR + 0.50% per annum. Moreover, ADB Loan 3092 secured through ADB, namely "SF Loan", is equivalent to 19.380 million Special Drawing Rights ("SDR") which in turn is equal to approximately US\$ 24.81 million assuming an exchange rate of US\$ 1.28 per SDR. The loan has a grace period of 5 years, a biannual repayment period of 20 years, and a



financing rate of 2.00% per annum.

b) Subsidiary Loan Agreement

As per the terms of the Lean Agreements with ADB for the Leans and the Subsidiary Lean Agreement between the GOP and the Project Company, the GOP shall relend to the Project Company, the proceeds of the (a) OCR Lean 1 on the basis of a 5 years grace period, 25 years biannual repayment period, commitment charges of 0.15% per annum, and a financing rate of 6 Month LIBOR + 4.50%; and (b) SF Lean on the basis of a 5 years grace period, 20 years biannual repayment period, and a financing rate of 15% per annum.

3.7.3 Selection of Technology

660 MW Supercritical Pulverized coal fired power plant.

Additional Plant Technical Details:

Plant configuration:

- 1. Installed capacity: 660 MW
- 2. Capacity at operating conditions: 660 MW
- 3. Auxiliary consumption: Approximately 33 MW
- 4. Net output: 627 MW
- 5. Life of Facility: 30 years



4 PROJECT COST, OPERATING COST AND TARIFF

4.1 PROJECT COST SUMMARY

The total Project Cost (the "**Project Cost**"), expressed in United States Dollars, has been calculated after thorough analysis, evaluation and understanding of the dynamics that affect the development and operation of a coal-fired power project. The reference exchange rates used to convert the relevant costs into United States Dollars are USD 1 = PKR 218.25.

For NEPRA's benefit and approval, a summary of the Project Cost is given below:

INVESTMENT / COST	US\$
EPC COST	545,253,550
NON-EPC COST	141,860,943
INTEREST DURING CONSTRUCTION	126,791,729
COMMITMENT FEE	8,842,994
TOTAL PROJECT COST	822,749,215

4.2 DETAILS OF PROJECT COST

4.2.1 EPC Cost

The EPC Cost of US\$ 545.254 million is calculated based on the turnkey contract executed with the EPC Contractor, including the cost of design, construction, testing, commissioning, and defect warranty period. The EPC Cost is divided between onshore and offshore costs as follows:

EPC Cost	USD
Offshore EPC Cost	475,309,601
Onshore EPC Cost	69,943,949
Total EPC Cost	545,253,550
Offshore EPC Cost	USD
Plant and Equipment	470,230,258
Spares parts	4,079,343
Change in order value	1,000,000
Total Offshore Cost	475,309,601

Onshore EPC Cost		USD	PKR
Change in order value	 ·	19,000,000	4,146,750,000
Basic Design			410,865,000
Installation & others services			8,854,475,150
Total Onshore Cost		69,943,949	13,412,090,150



Please note: the USD payments for "Basic Design" and "Installation & Other Services" are based on the actual USD amount paid and it amounts to USD 50.94 million.

4.2.2 Non-EPC Cost

The Non-EPC Cost includes those costs relating to the development and construction of the Project that are not part of the scope of work under EPC Contract entered into by the Project Company, breakdown of such costs is provided in the table below:

	Cost	US\$
A	Consultancy Costs & Technical Studies	18,082,474
В	Taxes & Custom Duty	41,915,597
С	Administration and Other Development Expenses	4,416,440
D	Independent Engineer - Pursuant to the PPA	206,186
E	Site works, Transport, and Infrastructure Cost	16,789,233
F	Pre-COD Testing and Commissioning	60,451,014
	TOTAL NON-EPC COST	141,860,943

A. <u>Consultancy Costs & Technical Studies</u>

The Project Company has endeavored to put together the best team of consultants for the Project and has engaged highly reputed and leading international consultants as project advisors that have unmatched expertise in planning, engineering, financial, legal, and technical matters. This is to ensure that the coal-fired power sector in the country is further developed and supports the increased access to electricity and the Project is bankable from all aspects. Based on the requirements of technical consultants, the Project Company has already completed electrical, geotechnical, topographical, soil and other related studies for the purpose of completing the Project's feasibility study.

The Project Company has also engaged an experienced in-house Owner's Engineer to ensure the compliance under the relevant contracts, as well as reporting on progress and budgets. The construction supervision team comprises Site engineers, supported by technical experts. The Owner's Engineer conducts review of proposed designs, construction monitoring and witnessing of key tests to ensure Project's success.

B. <u>Taxes & Custom Duty</u>

Taxes & duties amounting to PKR 9.15 billion (US\$ 41.915 million @ 218.25 PKR/USD) have been included in the total Project Cost. This amount includes the taxes & duties already incurred and approximately PKR 3.4 billion budgeted is to be incurred till COD.

The Authority is requested to allow all taxes and duties incurred by the Project Company as at the date of commercial operations commencement, on account of procurement of goods and services for the Project, as part of the Project Cost, through a one-time adjustment.



Taxes & Duties incurred		USD	PKR
Custom Duties & WHT		23,451,599	5,118,311,394
Sales Tax & WHT	:	861,006	187,914,606
Taxes & Duties to be incurred uli COD	land the second s	USD	PKR
Custom Duties & WHT		4,581,901	1,000,000,000
Sales Tax & WHT		10,996,564	2,400,000,000

The taxes and duties are requested to be adjusted at actual at the COD stage tariff adjustment / Tariff true-up.

C. Administration and Other Development Expenses

The Project Company's registered office is based in Lahore, Pakistan. In addition, there is a site office located at the Site of the Project to coordinate the construction and monitoring activities at Site. This portion of the Non-EPC Cost includes costs associated with accounting and administration staff, salary, rent, utilities, equipment inspection, communication charges, printing and stationery, supplies, communication charges, vehicle fuel and maintenance and other allied expenses during the construction period.

During development and construction of the Project, the Project Company will incur costs related to various fees and charges payable in respect of permits and permissions required from various authorities and regulatory bodies including but not limited to cost of, the letter of credit to be issued in favor of the CPPA-G, legal fee, NEPRA fee and charges, registration and other charges to the Securities & Exchange Commission of Pakistan, etc. to be incurred during development and construction of the Project.

Furthermore, these expenses also include costs related to travelling, accommodation, daily allowances, and other allied expenses of the foreign and local staff, incurred for development, arrangement of financing & EPC and for progress / monitoring meetings, etc.

The Project Company is responsible for the security of its local and foreign personnel and the EPC Contractor's staff, together with the coal-fired power plant equipment.

D. Independent Engineer

The Project Company has engaged an Independent Engineer pursuant to the PPA. Under the terms of the PPA, the Independent Engineer will be a firm of engineering consultants that would be appointed and hired by the Project Company, with the approval of the CPPA-G, to monitor the construction of the Project (including its commissioning), deliver the related certificates and carry out all the responsibilities specified in the PPA, including certifying the results of the commissioning tests, readiness of interconnection facilities and synchronization.

E. Site works, Transportation, and Infrastructure

This head includes transportation of staff during construction and costs related to ash pond



land & right of way for ash pond land, Site leveling & preparation, Site access, infrastructure, electricity connection costs, etc.

F. Pre-COD Testing and Commissioning

The budgeted amount of approximately US\$ 60.45 million is included in Non-EPC Cost for pre-COD testing and commissioning including coal, HSD, natural gas and ammonia and limestone.

Any other cost that relates to development and construction of the Project, if incurred, will be provided at the true-up stage.

4.2.3 Interest During Construction

The Interest During Construction (the "**IDC**") has been calculated based on the Subsidiary Loan Agreement executed between the Project Company and the re-Lender agency (Economic Affairs Division), which stipulates a base rate equal to 6 months LIBOR plus a margin of 450 basis points for ADB Loan 3090 and 15% flat rate for ADB Loan 3092 (USD financing).

The Project Company will endeavor to keep the IDC to its bear minimum therefore actual IDC, shall be subject to change depending on the fluctuations in base rate (i.e., 6-month LIBOR), funding requirement (drawdowns) of the Project during the construction period, changes in Project Cost including changes due to taxes and duties, and variations in PKR / USD exchange rate.

BASIS FOR IDC CALCULATIONS - ADB LOAN 3090		
BASE RATE – LIBOR	6 MONTHS	
Spread	4.5%	
TOTAL INTEREST RATE	6 MONTH LIBOR + 4.5 %	
BASIS FOR IDC CALCULATIONS - ADB LOAN 3092		
TOTAL INTEREST RATE	15%	

IDC, at this stage, is an estimated figure, which is adjustable at COD, based on actual LIBOR, timing and amount of loans drawdown during the Project construction period after financial close, therefore, it is prayed that NEPRA kindly allows adjustment for the same at the time of tariff true-up at COD.

4.2.4 Permanent Working Capital

Inflow of Funds During Operating Period

Under the terms of the PPA to be executed between the Project Company and the CPPA-G, the Project Company shall invoice CPPA-G for:



• (A) the Capacity Payment due in respect of the Available Capacity during the **previous** Month (or part-Month), less (B) below; and

(B) seventy (70%) percent of the estimated Available Capacity (at the Ambient Site Condition) during that Month;

- the Energy Payment due in respect of the **previous** Month (or part-Month); and any Quarterly Energy Purchase Shortfall due in respect of the previous Quarter (or part Quarter).
- any Unit Start-up Charges due in respect of the **previous** Month (or part-Month);
- any Supplemental Tariff due in respect of the **previous** Month (or part Month);
- any interest payable hereunder on an amount not paid by the Due and Payable Date on Capacity Payment and Energy Payment; and
- (A) Pre-COD Energy Price for all Net Electrical Output produced prior to the Commissioning Tests, due in respect of the **previous** Month (or part-Month);

(B) the Fuel Cost Component of the Energy Price (the "**Tested Energy Price**") for all Net Electrical Output produced during Commissioning Tests carried out prior to the Commercial Operations Date and due in respect of the **previous** Month (or part-Month), and

(C) the Energy Price for all Net Electrical Output produced during an Annual Capacity Test or any additional Capacity Tests following the Commercial Operations Date and due in respect of the **previous** Month (or part Month)

(In respect of each capitalized term, as defined in the PPA).

The CPPA-G must make the payment of the same by the 30^{th} day following the day of submission of the invoice i.e., 31^{st} day.

The working capital requirement has been calculated based on a 90 day coal inventory, 30 day limestone and ammonia inventory, 30 day fuel cost receivable, one (1) year Insurance During Operation cost and fuel start-up costs, in each case, as allowed by the Authority in past precedents. Interest on working capital has been calculated on the basis of 6-month KIBOR of 15.77% plus a spread of 2.00%. The Project Company assumes that it will receive timely payments (including energy payments and minimum capacity payments) from CPPA-G under the PPA.



4.3 **PROJECT FUNDING STRUCTURE (DEBT & EQUITY)**

4.3.1 The Funding Plan

The Project Cost will be funded based on a debt: equity ratio of 86.24: 13.76, thereby resulting in the following capital structure for the Project:

	1	US\$
DEBT -FOREIGN	86.24%	709.58 million
EQUITY	13.76%	113.17 million
TOTAL PROJECT COST	100%	822.75 million

4.3.2 Brief on Debt and Equity Financing

The envisaged debt-equity structure of the Project is 86.24: 13.76 implying a total debt requirement of US\$ 709.58 million (based on a Project Cost of US\$ 822.75 million).

The 86.24% debt financing will be funded by the ADB.

Debt amount will be denominated in USD (repayment in USD, interest payments to be indexed to 6 Month LIBOR which is assumed at 4.45% for the calculation purpose).

Based on the current Project Cost estimates, the equity required to be injected by the GOP, amounts to US\$ 113.17 million.

4.3.3 Return on Equity

The Return on Equity ("**ROE**"), based on the blended usage of 80% imported sub-bituminous coal & 20% local Thar coal, has been assumed at 27.66% ($27.20\% \times 80\% + 29.50\% \times 20\%$), whereas the ROE based on the usage of 100% imported sub-bituminous coal has been assumed at 27.20% in calculation of our tariff. As allowed in previous coal tariffs, the Return on Equity During Construction ("**ROEDC**") will be adjusted at COD, on the basis of actual equity injections (within the overall equity allowed by NEPRA at COD) during the Project construction period of 60 months allowed by NEPRA.

4.3.4 Debt Servicing

The capital structure of the Project is envisaged at 86.24: 13.76 (debt: equity).

4.3.4.1 Terms of Debt Financing

The following terms for financing the debt portion of the Project Cost have been agreed and locked, between the Project Company and the Lender, through execution of the Financing Agreements.



Cost Head – ADB Loan 3090	Terms
Base Rate – LIBOR	6 Month
Spread	4.5%
Debt Markup – excluding IDC – USD in million	664.07
Repayment Period	25 years
Grace Period	60 months
Re-Payment	Semi-annual

Cost Head – ADB Loan 3092	Terms
Flat Rate	15%
Debt Markup - excluding IDC - USD in million	53.89
Repayment Period	20 years
Grace Period	60 months
Re-Payment	Semi-annual

4.4 FUEL COST

The requirement for coal per annum has been computed in line with the general practice of computing the annual energy produced from heating coal required to achieve the energy output of the plant based on the thermal efficiency of the same. The calorific value of the imported sub-bituminous coal and price of the imported sub-bituminous coal has been based on the December average of 2022 (Argus index), whereas, thermal efficiency of the plant, and other plant parameters have all been based on the values contained in the EPC Contract for the Project. Moreover, the calorific value of the local Thar lignite and price of the local Thar lignite coal has been based on the most recent prices available from Thar Coal & Energy Board.

Fuel Cost Parameters	······
Plant Capacity (MW)	660
Plant Capacity / Availability Factor	85%
Annual Energy Output of Plant (kWh) – Net	4,668,642,000
Calorific Value of Sub-Bituminous Coal - KCal / Kg – (HHV)	6,000
Calorific Value of Sub-Bituminous Coal - kCal / Kg – (LHV)	5,682
Calorific Value of Thar Lignite - kCal / Kg – (HHV)	2,773
Calorific Value of Thar Lignite - kCal / Kg - (LHV)	2,413
Price of Coal (USD / Tonne) - Sub-Bituminous (at plant	
site)	249.80
Price of Coal (PKR / Tonne) - Thar Lignite (at plant	11 701
site)	11,/31
Exchange Rate (USD / PKR)	218.25
Net Thermal Efficiency of Plant (100% Sub-Bituminous) - LHV	43.61%

	Net Thermal Efficiency of Plant (80% Sub-Bituminous & 20% Thar Lignite) - LHV	42.68%
ĺ	Cost of Fuel - 100% Sub-Bituminous (PKR/kWh)	18.93
	Cost of Fuel - 80% Sub-Bituminous & 20% Thar Lignite (PKR/kWh)	18.79

4.5 COSTS OF ASH DISPOSAL, LIMESTONE & AMMONIA

Costs of ash disposal and limestone have been assumed at the price of PKR 0.22 and PKR 0.09 per kWh, respectively, which are in accordance with the Feasibility Stage Tariff and past precedents, approved by the Authority.

Cost of ammonia has been assumed at PKR 0.0557 per kWh, based on the rates obtained from market quotations.

4.6 **OPERATING COSTS**

4.6.1 Breakup of Operating Cost

The operating cost of the Project Company comprises of the operations and maintenance ("O&M") cost and the cost of the operational insurances to be taken out by the Project Company. Breakup of the same is provided hereunder:

Fixed O&M (US\$)		
Years	Foreign	Local
1	10,137,067	
2	11,629,757	
3	10,015,343	5,295,897
4	12,049,930	
5-30	13,950,540	
	Variable O&M (US\$)	
Years	Foreign	Local
1 - 30	2,300,000	1,398,428
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4.6.2 Understanding & Benchmarks for O&M Contract

The Project Company has signed the O&M Contract with M/s. Siemens-HEI Consortium, wherein the initial term of O&M arrangement for the Project will be 5 years. Under the arrangement, the O&M Contractor shall be responsible for provision or procurement and performance of all the works, services, supplies, and other activities including management services necessary to operate and maintain the Project to ensure energy production is maximized and that the Project is operated and maintained in accordance with the applicable performance standards, agreed environmental-social & monitoring plans and prudent operating practices.

The initial term of 5 years for O&M services through a fixed contract is ensured to cover a major part of the debt repayment period of the Project and provide additional comfort to the Lender.

The Project Company humbly requests, that the O&M costs presented, may kindly be allowed by NEPRA to ensure smooth, efficient, and effective operations of the Project.

4.6.3 Insurance During Operation Period

The insurance cost consists of the insurances required under the PPA coupled with those customarily required for project financing transactions, including all-risk insurance/reinsurance, business interruption insurance, and machinery break-down, natural calamities, sabotage, and terrorism. As these risks are an impediment to the smooth and efficient running of the day-to-day affairs of the Project, it is critical that all risks associated with the Project are adequately addressed and all insurable events are catered for in a foolproof manner. Keeping in view the generally adopted global trends and the magnitude of the Project, a comprehensive operational insurance and reinsurance arrangement is also fundamental to ensure bankability of the Project.

During the operations phase, the Project Company intends to acquire insurance from one of the leading insurance companies in the country. As it is a standard practice for local insurers to only retain 5% of the risk and acquire reinsurance for the remaining 95% through foreign re-insurer, it is prayed to NEPRA that the insurance costs for the operations phase be allowed in US Dollars (as has been done in case of all other power projects). The requirement to have the operational phase insurance cost denominated in US Dollars is further supported by the fact that the Lender financing the Project will inevitably require the Project to be insured on replacement cost basis; since a major part of the total Project Cost is already denominated in US Dollars. It is pertinent to highlight, that any replacement costs incurred, as a consequence of the occurrence of an insurable event, will also be incurred in US Dollars.

The Project Company, in view of the practices set by other IPPs and GENCOs in Pakistan and in accordance with the requirements set by the Lender, proposes to procure the following insurance during the operational phase of the Project:



- Property Damage and Comprehensive Machinery Insurance (including Business Interruption insurance);
- Third Party Liability;
- Terrorism insurance;
- Group Personal Accident Insurance; and
- Motor Comprehensive Insurance

The insurance cost has been estimated at 0.7% of the EPC Cost excluding taxes and duties based on the strength of the GOP's relations with the insurers from International Market through National Insurance Company Limited (NICL) market, however any increase therefrom up to 0.7% of the EPC Cost may kindly be allowed upon submission of evidence. The insurance cost shall be charged by the Project Company at actual (subject to proposed cap) and will be recoverable as the insurance cost component of the Reference Generation Tariff.

The insurance cost (for the operations phase) set out in the Tariff Petition does not, however, cover the administrative surcharge, Federal Excise Duty, and Federal Insurance Fee, that might be applicable on the insurance cost, the same should be treated as a **pass-through item** under the tariff determination.

4.7 **REFERENCE GENERATION TARIFF & DEBT SCHEDULE**

4.7.1 Tariff Control Period

As the Project is 86.24% debt funded with a loan tenure of 30 years for repayment (including 60 months grace period), this means that there will be higher debt service cost requirements in the first 25 years of the Project. The last 5 years of the Project are debt free, therefore, the tariff will decrease significantly.

The proposed tariff is for the life of the Project i.e., term of the PPA, to be signed with the CPPA-G, which is 30 years from COD. The tariff is divided into two bands i.e., year 1 to 25 (grace period and debt serving period) and year 25 to 30 (remaining Project term).

4.7.2 Summary of Reference Generation Tariff

A summarized Reference Generation Tariff table is provided below, subject to indexations, escalations and one-time adjustments further submitted below:



SCENARIO A: 100% IMPORTED SUB-BITUMINOUS COAL

PKR /kWh

	Component	TARIFF	
Fuel Cost			19.034
Cost of Ash Di Ammonia	sposal, Limestone &		0.37
O&M	Local		0.31
	Foreign		0.72
Cost of Worki	ng Capital		1.41
Insurance			0.17
ROE & ROED)C		1.92
Debt servicing			3.18
Total Levelize	d		27.11

SCENARIO B: BLENDED - 80% IMPORTED SUB-BITUMINOUS & 20% LOCAL THAR LIGNITE

PKR /kWh

	COMPONENT	TARIFF
Fuel Cost		18.9833
Cost of Ash Di Ammonia	isposal, Limestone &	0.37
O&M	Local	0.31
	Foreign	0.72
Cost of Worki	ng Capital	1.41
Insurance		0.17
ROE & ROEI	DC	1.96
Debt servicing		3.18
Total Levelize	d	27.10



Page 36 of 42

4.7.3 Reference Generation Tariff Table

SCENARIO A: 100% IMPORTED SUB-BITUMINOUS

		En	iergy Purc	hase Pric	e (EPP)					Ua	pacity Fu	i chase l	nice (C:	<u>(</u> חַר			Total	「ariff
Year	Fuel Cost Component	Cost of Ash Disposal	Cost of Limestone	Cost of Ammonia	Variabl	e O&M	Total EPP	Fixed	0&M	Cost of Working Capital	Insurance	Return on Equity	ROEDC	Principal	Interest	Total CPP	PKR / KWh	USD / KWh
		1			Foreign	Local		Foreign	Local									
1 .	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.4739	0.2476	1.4048	0.1722	1.4390	0.4703	0.7017	1.5340	6.4435	25.9119	0.1187
2	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.5437	0.2476	1.4048	0.1722	1.4390	0.4703	1.4033	2.9701	8.6510	28.1194	0.1288
3	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.4682	0.2476	1.4048	0.1722	1.4390	0.4703	1.4033	2.8395	8,4450	27.9134	0.1279
4	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.5633	0.2476	1.4048	0.1722	1.4390	0.4703	1.4033	2.7090	8.4095	27.8780	0.1277
5	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.4033	2.5784	8.3678	27.8363	0.1275
6	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.5309	2.4479	8.3649	27.8333	0.1275
7	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.5522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	2.3002	8.3449	27.8133	0.1274
8	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	2.1468	8.1915	27.6599	0.1267
Э	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	1.9934	8.0381	27.5065	0.1260
10	18,9298	0.2200	0.0900	0.úsé7	0.1075	0.0664	13.4684	0.6522	0.2476	1.4048	0.1722	1, 1090	0.4703	1.5586	1.3400	7.3847	27.3531	0.1253
11	18,9298	0.2200	0.0900	2,0557	0 1075	0.0654	19.4634	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	1.6866	7,7313	27.1997	0.1246
12	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	1.5332	7.5779	27.0463	0.1239
13	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	1.3798	7.4245	26.8929	0.1232
14	13.9298	0.2200	0.090.0	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6586	1.2264	7.2711	26.7395	0.1225
15	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4634	0.6622	0.2476	1.4048	0.1722	1.4590	0.4763	1.8586	1.0700	7.1177	20.5861	0.1219
16	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.6961	0.9196	7.0018	26.4702	0.1213
17	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.7337	0.7611	6.8809	26.3493	0.1207
18	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.7337	0.6010	6.7208	26.1892	0.1200
19	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.7337	0.4409	6.5607	26.0291	0.1193
20	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	1.7337	0.2808	6.4006	25.8690	0.1185
21	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	0.9569	0.1207	5.4637	24.9321	0.1142
22	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	0.1802	0.0685	4.6348	24,1033	0.1104
23	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19,4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	0.1802	0.0524	4.6187	24.0871	0.1104
24	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	0.1802	0.0363	4.6026	24.0710	0.1103
25	18,9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	0.1802	0.0202	4.5865	24.0549	0.1102
26	18,9298	0.2200	0.0900	0.0557	C.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	0.0901	0.0040	4,4802	23.9487	0.1097
27	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703			4.3861	23.8545	0.1093
28	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703		•	4.3861	23.8545	0.1093
29	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	•	•	4.3861	23.8545	0.1093
30	18.9298	0.2200	0.0900	0.0557	0.1075	0.0654	19.4684	0.6522	0.2476	1.4048	0.1722	1.4390	0.4703	•	•	4.3861	23.8545	0.1093
Levelized Tariff	19.0344	0.2212	0.0905	0.0560	0.1075	0.0657	19.5754	0.6080	0.2476	1.4126	0.1732	1.4470	0.4729	1.3490	1.8267	7.5369	27.1123	0.1242

SCENARIO B: BLENDED - 80% IMPORTED SUB-BITUMINOUS & 20% LOCAL THAR LIGNIT

	Energy Purchase Price (EPP)						Capacity Purchase Price (CPP)						Total Tariff					
Year	Fuel Cost Component	Cost of Ash Disposal	Cost of Limestone	Cost of Ammonia	Variabk	e 0&M	Total EPP	Fixed	08M	Cost of Working Capital	Insurance	Return on Equity	ROEDC	Principal	Interest	Total CPP	PKR/ KWh	USD / KWh
					Foreign	Local		Foreign	Local				-	-		- A.		
1	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.4739	0.2476	1.4048	0.1722	1.4634	0.4864	0.7017	1.5340	6.4839	25.9014	0.1187
2	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.5437	0.2476	1.4048	0.1722	1.4634	0.4864	1.4033	2.9701	8.6914	28.1089	0.1288
3	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.4682	0.2475	1.4048	0.1722	1.4634	0.4864	1.4033	2.8395	8.4854	27.9029	0.1278
4	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.5633	0.2476	1.4048	0.1722	1.4634	0.4864	1.4033	2.7090	8.4499	27.8675	0.1277
5	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.4033	2.5784	8.4082	27.8258	0.1275
6	18.8790	0.2200	0.0900	0.0557	0 1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4854	1.5309	2.4479	8.4053	27.8228	0.1275
7	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	2.3002	8.3852	27.8028	0.1274
8	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	2.1468	8.2318	27.6494	0.1267
9	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	1.9934	8.0784	27.4960	0.1260
10	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	1.8400	7.9250	27.3426	0.1253
11	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0,4864	1.6586	1.6866	7.7716	27.1892	0.1246
12	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	1.5332	7.6182	27.0358	0.1239
13	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	1.3798	7.4648	26.8824	0.1232
14	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	1.2264	7.3114	26.7290	0.1225
15	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6586	1.0730	7.1580	26.5756	0.1218
16	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.6961	0.9196	7.0422	26.4597	0.1212
17	18.8790	0.2200	0.0900	0 0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.7337	0.7611	6.9213	26.3388	0.1207
18	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.7337	0.6010	6.7612	26.1787	0.1199
19	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.7337	0.4409	6.6011	26.0186	0.1192
20	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	1.7337	0.2808	6.4409	25.8585	0.1185
21	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	0.9569	0.1207	5.5041	24.9216	0.1142
22	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4175	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	0.1802	0.0685	4.6752	24.0928	0.1104
23	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1 4048	0.1722	1.4634	0.4854	0.180?	0.0524	4.6591	24.0767	0.1103
24	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	0.1802	0.0363	4.6430	24.0605	0.1102
25	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0 6522	0.2476	1.4048	0.1722	1.4634	0.4864	0.1802	0.0202	4.6268	24.0444	0,1102
26	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	0.0901	0.0040	4,5206	23.9382	0.1097
27	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864			4.4265	23.8441	0,1093
28	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	-	•	4.4265	23.8441	0.1093
29	18.8790	0.2200	0.0900	0.0557	0.1075	0.0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864			4.4265	23.8441	0.1093
30	18.8790	0.2200	0.0900	0.0557		0,0654	19.4176	0.6522	0.2476	1.4048	0.1722	1.4634	0.4864	· · · ·	-	4.4265	23.8441	0.1093
Levelized Tariff	18,9833	0.2212	0.0905	0.0560	0.1075	0.0657	19.5243	0.6080	0.2476	1.4126	0.1732	1.4714	0.4891	1.3490	1.8267	7.5775	27.1018	0.1242

Note:

i. Reference Generation Tariff(s) at partial loading condition(s) and rating(s), of the Facility will be requested from NEPRA for true-up at COD/TOC, after the performance of heat rate tests at respective plant loads, provided that, such plant loads are subject to the requirement of CPPA-G and/ or system operator and consent of the EPC Contractor.

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- *ii.* The variation in heat rate from the point/ time of synchronization to a full load/ base load will be requested from NEPRA to be adjusted/considered in accordance with manufacturer(s)/EPC Contractor's calculation methods/correction curves.
- *iii.* The adjustment/variation in reference/determined heat rate(s) and output will be requested from NEPRA as per standard practice and in accordance with all correction curves provided by manufacturer(s)/EPC Contractor.

It is prayed that NEPRA kindly allows adjustment for the same at the time of tariff true-up at COD/TOC.



4.7.4 Debt Repayment Schedule

Debt Repayment Schedules of the Loans (in PKR) are as follows:

ADB LOAN 3090			i .	
Year	Opening Balance	Repayment	interest	Closing Balance
1	147,215,762,155	6,169,041,181	13,037,778,416	141,046,720,973
2	141,046,720,973	6,169,041,181	12,485,649,231	134,877,679,792
3	134,877,679,792	6,169,041,181	11,933,520,045	128,708,638,611
4	128,708,638,611	6,169,041,181	11,381,390,859	122,539,597,429
5	122,539,597,429	6,169,041,181	10,829,261,673	116,370,556,248
6	116,370,556,248	7,360,788,108	10,250,467,150	109,009,768,140
7	109.009,768,140	7,360,788,198	9,591,676,615	101,648,980,033
8	101,648,980,033	7,360,788,108	8,932,886,079	94,288,191,925
9	94,288,191,925	7,360,788,108	8,274,095,543	86,927,403,817
10	86,927,403,817	7,360,788,108	7,615,305,008	79,566,615,709
11	79,566,615,709	7,360,788,108	6,956,514,472	72,205,827,602
12	72,205,827,602	7,360,788,108	6,297,723,936	64,845,039,494
13	64,845,039,494	7,360,788,108	5,638,933,401	57,484,251,386
14	57,484,251,386	7,360,788,108	4,980,142,865	50,123,463,278
15	50,123,463,278	7,360,788,108	4,321,352,330	42,762,675,171
16	42,762,675,171	7,711,302,949	3,654,719,024	35,051,372,222
17	35,051,372,222	7,711,302,949	2,964,557,410	27,340,069,273
18	27,340,069,273	7,711,302,949	2,274,395,796	19,628,766,324
19	19,628,766,324	7,711,302,949	1,584,234,183	11,917,463,376
20	11,917,463,376	7,711,302,949	894,072,569	4,206,160,427
21	4,206,160,427	841,232,085	357,628,790	3,364,928,341
22	3,364,928,341	841,232,085	282,338,519	2,523,696,256
23	2,523,696,256	841,232,085	207,048,247	1,682,464,171
24	1,682,464,171	841,232,085	131,757,975	841,232,085
25	841,232,085	841,232,085	56,467,704	O



ADB LOAN 3092				
Year	Opening Balance	Repayment	Interest	Closing Balance
1	7,649,786,930	382,489,346	1,133,124,689	7,267,297,583
2	7,267,297,583	382,489,346	1,075,751,287	6,884,808,237
3	6,884,808,237	382,489,346	1,018,377,885	6,502,318,890
4	6,502,318,890	382,489,346	961,004,483	6,119,829,544
5	6,119,829,544	382,489,346	903,631,081	5,737,340,197
6	5,737,340,197	382,489,346	846,257,679	5,354,850,851
7	5,354,850,851	382,489,346	788,884,277	4,972,361,504
8	4,972,361,504	382,489,346	731,510,875	4,589,872,158
9	4,589,872,158	382,489,346	674,137,473	4,207,382,811
· 10	4,207,382,811	382,489,346	616,764,071	3,824,893,465
11	3,824,893,465	382,489,346	550,390,669	3,442,404,118
12	3,442,404,118	382,489,346	502,017,267	3,059,914,772
13	3,059,914,772	382,489,346	444,643,865	2,677,425,425
14	2,677,425,425	382,489,346	387,270,463	2,294,936,079
15	2,294,936,079	382,489,346	329,897,061	1,912,446,732
16	1,912,446,732	382,489,346	272,523,659	1,529,957,386
17	1,529,957,386	382,489,346	215,150,257	1,147,468,039
18	1,147,468,039	382,489,346	157,776,855	764,978,693
19	764,978,693	382,489,346	100,403,453	382,489,346
20	382,489,346	382,489,346	43,030,051	(0)

4.8 START-UP CHARGE

The calculation and escalation mechanism pertaining to the start-up charge have been attached as "ANNEXURE I".

The energy consumed (imported) and dispatched (exported) to CPPA-G during the testing & commissioning phase will be charged/ accounted for as per actual billing at the time of COD tariff.

The Authority is requested to allow the start-up charge based on the actual cost incurred at the COD stage.

4.9 INDEXATIONS, ESCALATIONS AND COST ADJUSTMENT

4.9.1 Indexations

NEPRA is requested to allow indexation for the various Reference Generation Tariff components in the following manner:

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TARIFF COMPONENTS	INDEXATION
Fixed O&M	
Local	[PKR CPI]
Foreign	As per the O&M Contract
Insurance	Actual with maximum of 0.7% of EPC Cost.
Debt Service	[US\$ & LIBOR]
Cost of Working Capital	[PKR & KIBOR]
Return on Equity	[PKR]

4.9.2 One Time Adjustments

The following one-time adjustments are requested to the Reference Generation Tariff:

- (i) Charges for the letter of credit (to be opened)/Direct Payment (to be made) in favor of the supply contractor or vendors, may be adjusted at COD/Taking Over Certificate ("TOC") on actual basis.
- (ii) Duties and/or taxes, not being of refundable nature, imposed on the Project Company up-to the commencement of its commercial operations for the import of its plant, machinery and equipment will be subject to adjustment at actual on COD/TOC.
- (iii) The IDC may be adjusted at COD/TOC on the basis of actual debt drawdowns and actual PKR/US\$ exchange rate variation for foreign loan denominated in USD and interest calculated on the actual 6 months LIBOR per annum.
- (iv) The ROEDC may be adjusted at COD/TOC on the basis of actual equity injections during the Project construction period.
- (v) The ROE (including ROEDC) will be adjusted at COD/TOC on the basis of PKR/US\$ exchange rate variation.
- (vi) All Project Costs i.e., costs incurred prior to Commercial Operations Date are allowed in USD. At COD/TOC, all project costs paid in PKR shall be converted using the reference PKR/dollar rate to ensure that the cost incurred do not exceed the cost allowed by NEPRA.

The Reference Generation Tariff table may please be revised at COD/TOC while taking into account the above adjustments, including the adjustments mentioned in Section 4.7.3 and any other adjustments which are considered necessary at the time of submission of the COD stage tariff petition.

4.9.3 Pass-Through Items

- i. No provision for income tax, WPPF and WWF have been accounted for in the tariff. If any tax or charges are imposed on the Project Company, the exact amount paid by the Project Company shall be reimbursed by the CPPA-G to the Project Company on production of original receipts.
- ii. The import energy for the auxiliary consumption at the condition when the plant is at standby mode as per demand of system operator will be requested from NEPRA at the time of COD/TOC.

4.9.4 General Assumptions

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The following have been assumed while calculating the Reference Generation Tariff and changes in any of these assumptions will result in changes in the Reference Generation Tariff:

- (i) The Reference Generation Tariff has been calculated on the basis of net annual benchmark energy generation of 4,668,642,000kWh/year at annual net plant capacity factor of 85% on installed capacity of 660 MW, with a guaranteed offtake requirement of 50% of the minimum quarterly energy of the plant.
- (ii) The reference PKR/dollar rate has been assumed at 218.25 (October 13, 2022).
- (iii) The 6 months LIBOR is assumed to be 4.45% p.a (October 13, 2022).
- (iv) The US CPI for indexation of Reference Generation Tariff is assumed at 2%.
- (v) The CPI for Local Indexation Factor is assumed at 8%.
- (vi) The Reference Generation Tariff is applicable for a period of 30 years commencing from the Commercial Operations Date.
- (vii) The terms of the Coal Supply Agreement (the "CSA") have not been finalized by the Project Company since it is subject to a public procurement and the PPA with CPPA-G is also under negotiations. Therefore, we request the Authority to allow for reconsideration of such relevant terms and conditions of the tariff that are negotiated as an outcome of the negotiations of the CSA and the PPA.

5 SUBMISSION

In summation, the Project Company herewith most respectfully submits before NEPRA, for its approval on the matters set out in this Tariff Petition and further prays to NEPRA to kindly approve the Reference Generation Tariff table together with its assumptions and conditions.

Furthermore, given the advance stage of the Project, NEPRA is kindly requested to process the Tariff Petition at the earliest-thereby enabling the Project Company to proceed further with the development process