

TAPAL ENERGY (PRIVATE) LIMITED

Corporate Office: F-25 • Block 5 • Rojhan Street
Kehkashan • Clifton • Karachi - 75600 • Pakistan
Tel : +92-21-35876994 - 7
Fax : +92-21-35876991 & 35876993
Email : telcoff@tapalenergy.com.pk

THE REGISTRAR,
NATIONAL ELECTRICAL POWER REGULATORY AUTHORITY
NEPRA Tower, Attaturk Avenue (East)
G-5/1,
Islamabad

DATE: - 7TH DECEMBER 2018
REF: - TEL/NEPRA/011/19

SUBJECT: TARIFF PETITION FOR REFERENCE GENERATION TARIFF

Dear Sir,

I, MUSTAFA LAKDAWALA, Chief Financial Officer of the Company, being the duly Authorized Representative of TAPAL ENERGY (PRIVATE) LIMITED (the Company) by virtue of the resolution of the Board of Directors dated 1st NOVEMBER 2018, hereby submit the application for Reference Generation Tariff, under the *Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997* (the NEPRA Act), before the National Electric Power Regulatory Authority (the Authority) being responsible, inter alia, for determining tariffs and other terms and conditions for the supply of electricity through generation, transmission and distribution. The Authority 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 NEPRA (Tariff Standards and Procedure) Rules, 1998 (the NEPRA Rules) and request for approval of the Authority.

I certify that the documents-in-support attached with this application are prepared and submitted in conformity with the prevailing provisions of the NEPRA Act and the NEPRA Rules, and I undertake to abide by the terms and provisions of the above-said regulations. I further undertake and confirm that the information provided in the attached documents-in-support is true and correct to the best of my knowledge and belief.

A Pay Order number 00262250, issued by Summit Bank Limited, Uni Tower Branch, I.I. Chundrigar Road, Karachi, in the sum of PKR 1,629,760/- being the non-refundable application processing fee calculated in accordance with National Electric Power Regulatory Authority (Fees Pertaining to Tariff Standards and Procedure) Regulations, 2002, is also enclosed herewith.

I hereby further request the Authority to accede to my request for approval of our application for Reference Generation Tariff.

Respectfully submitted for and on behalf of:
TAPAL ENERGY (PRIVATE) LIMITED

MR. MUSTAFA LAKDAWALA
(AUTHORIZED REPRESENTATIVE)

For information
— DRO I / DR I mfa H.
GPR 13.
— SA (TRH) — SA I
— DG (MSE) — ADG (L) e. chairman
— LAC (MSE) — MF m G) / m (MSE)
m G)

Received Petition in three folders alongwith Chq. 00262250, 760/-

REGISTRAR
Dy. No. 12090
Dated: 10-12-18

BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (NEPRA)

TARIFF PETITION
FOR
REFERENCE GENERATION TARIFF

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

ON BEHALF OF

TAPAL ENERGY (PRIVATE) LIMITED

FOR NEPRA'S APPROVAL OF REFERENCE GENERATION TARIFF
FOR
TAPAL ENERGY (PRIVATE) LIMITED

RELATING TO A THERMAL POWER GENERATION FACILITY OF 126 MW (GROSS)

LOCATED AT

DEH GONDPASS, TAPO GABOPAT, HUB RIVER, TALUKA & DISTRICT KARACHI (WEST),
KARACHI, SINDH, PAKISTAN

DATED: DECEMBER 7, 2018

LEGAL & REGULATORY CONSULTANT

HAIDERMOTABNR & Co.

KARACHI OFFICE
D-79, BLOCK 5, KDA SCHEME 5, CLIFTON
KARACHI, PAKISTAN
TEL: +92-21-111520000
FAX: +92-21-35871054
EMAIL: ali.khan@hmcobnr.com

PETITIONER

TAPAL ENERGY (PRIVATE) LIMITED

REGISTERED OFFICE
155-A, STREET NO. 37, SECTOR F-10/1
ISLAMABAD, PAKISTAN
TEL: +92-51-2344413
FAX: +92-51-2344411
EMAIL: telcoff@tapalenergy.com.pk

TABLE OF CONTENTS

TABLE OF CONTENTS

1. DETAILS OF PETITIONER.....	12
2. INTRODUCTION TO PETITIONER & THE PROJECT	14
3. BACKGROUND TO THIS TARIFF PETITION.....	18
4. THE FACILITY	22
5. THE GENERATION LICENSE.....	26
6. KEY CONSIDERATIONS	28
7. REFERENCE GENERATION TARIFF SUMMARY.....	32
8. ENERGY PURCHASE PRICE	35
9. CAPACITY PURCHASE PRICE	39
10. CRITICAL ADJUSTMENTS & PASS THROUGH ITEMS	44
11. GENERAL ASSUMPTIONS	47
12. CONCLUSION	50

CM

**COPY
OF
AFFIDAVITS OF AUTHORIZED REPRESENTATIVES
OF
TAPAL ENERGY (PRIVATE) LIMITED**



F/A-4

CERTIFIED TRUE COPY OF RESOLUTION
OF THE BOARD OF DIRECTORS OF
TAPAL ENERGY (PRIVATE) LIMITED
PASSED ON NOVEMBER 1, 2018

"It is hereby unanimously resolved that:

- (A) **Tapal Energy (Private) Limited** (a private company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street no. 37, Sector F-10/1, Islamabad, Pakistan) (the **Company**), being currently in the process of extending the current term by five (5) years (the **PPA Term Extension**) (on such terms as are mutually agreed and subsequently approved by the board of directors of the Company (the **Board**) of its 'Power Purchase Agreement' dated September 26, 1995 entered into with **K-Electric Limited** (a public limited company duly established and existing under the laws of Pakistan with its registered office located at KE House, 39-B, Sunset Boulevard, Phase-II, Defence Housing Authority, Karachi, Pakistan) (**KE**) in respect of its 126 MW (Gross) thermal power generation facility located at Deh Gondpass, Tapo Gabopat, Hub River Road, Taluka & District Karachi (West), Karachi, Sindh, 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. Tabish Tapal** (being the chief executive officer of the Company and having CNIC No 42301-2385059-9) and **Mr. Mustafa Lakdawala** (being the chief financial officer of the Company and having CNIC No 42201-3140375-9) **Be And Are Hereby** singly and 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 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, KE, 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);



**TAPAL
ENERGY**

- (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, KE, 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 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 aforesaid and give full effect to the above resolutions.


Mustafa Lakdawala
Company Secretary





BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT of **TABISH TAPAL** son of Moiz S. Tapal, resident of 33-B, 3rd Gizri Street, Phase IV, DHA, Karachi and holding CNIC No. 42301-2385059-9 (the **Deponent**), being the 'CHIEF EXECUTIVE OFFICER' of **TAPAL ENERGY (PRIVATE) LIMITED** (a company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street no. 37, Sector F-10/1, Islamabad, Pakistan).

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

- (a) I am the 'CHIEF EXECUTIVE OFFICER' of **TAPAL ENERGY (PRIVATE) LIMITED** (a company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street no. 37, Sector F-10/1, Islamabad, Pakistan) (the **Petitioner**).
- (b) 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 December 7, 2018 (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 November 1, 2018.
- (c) 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.
- (d) 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

VERIFICATION

It is hereby verified on solemn affirmation at Karachi, Pakistan on this 7th day of December 2018, 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.

ATTESTED

ASAD ABBAS JAFRI

009654

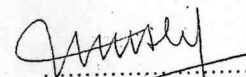


BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT of MUSTAFA LAKDAWALA son of Abid Hussain Lakdawala, resident of 14/A, Block 7/8 Overseas Housing Society, Ameer Khusro Road, Karachi and holding CNIC No. 42201-3140375-9 (the **Deponent**), being the 'CHIEF FINANCIAL OFFICER' of **TAPAL ENERGY (PRIVATE) LIMITED** (a company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street no. 37, Sector F-10/1, Islamabad, Pakistan).

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

- (a) I am the 'CHIEF FINANCIAL OFFICER' of **TAPAL ENERGY (PRIVATE) LIMITED** (a company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street no. 37, Sector F-10/1, Islamabad, Pakistan) (the **Petitioner**).
- (b) 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 December 7, 2018 (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 November 1, 2018.
- (c) 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.
- (d) 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.

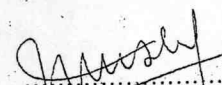

DEPONENT

VERIFICATION

It is hereby verified on solemn affirmation at Karachi, Pakistan on the 7th day of December, 2018, that the contents of the above Affidavit are true and correct to the best of my knowledge and belief, and nothing material or relevant thereto has been concealed or withheld therefrom to the best of my knowledge and belief.

ATTESTED

ASAD ABAS JAFRI


DEPONENT

**COPY OF
EXTRACT OF
RESOLUTION PASSED BY
BOARD OF DIRECTOR OF
TAPAL ENERGY (PRIVATE) LIMITED**

**EXTRACTS OF THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF
TAPAL ENERGY (PRIVATE) LIMITED ON NOVEMBER 1, 2018**

BOARD RESOLUTIONS

"It is hereby unanimously resolved that:

- (A) **TAPAL ENERGY (PRIVATE) LIMITED** (a private company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street no. 37, Sector F-10/1, Islamabad, Pakistan) (the **Company**), being currently in the process of extending the current term by five (5) years (the **PPA Term Extension**) (on such terms as are mutually agreed and subsequently approved by the board of directors of the Company (the **Board**) of its 'POWER PURCHASE AGREEMENT' dated September 26, 1995 entered into with **K-ELECTRIC LIMITED** (a public limited company duly established and existing under the laws of Pakistan with its registered office located at KE House, 39-B, Sunset Boulevard, Phase-II, Defence Housing Authority, Karachi, Pakistan) (**KE**) in respect of its 126 MW (Gross) thermal power generation facility located at Deh Gondpass, Tapo Gabopat, Hub River Road, Taluka & District Karachi (West), Karachi, Sindh, 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. TABISH TAPAL** (being the chief executive officer of the Company and having CNIC No 42301-2385059-9) and **MR. MUSTAFA LAKDAWALA** (being the chief financial officer of the Company and having CNIC No 42201-3140375-9) **BE AND ARE HEREBY** singly and 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 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, KE, 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 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, KE, 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 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 aforesaid and give full effect to the above resolutions.

CERTIFICATION
CERTIFIED TO BE TRUE COPY

CERTIFIED, that, the above resolutions were duly passed by the board of directors of TAPAL ENERGY (PRIVATE) LIMITED (*a private company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street No. 37, Sector F-10/1, Islamabad, Pakistan*) on November 1, 2018.

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.


.....
COMPANY SECRETARY

SECTION 1
DETAILS OF PETITIONER

JA

1. DETAILS OF PETITIONER

1.1 NAME & ADDRESS

TAPAL ENERGY (PRIVATE) LIMITED
55-A, Street No. 37, Sector F-10/1,
Islamabad, Pakistan
Tel: +92-51-2344413
Fax: +92-51-2344411

1.2 AUTHORIZED REPRESENTATIVES

1.2.1 MR. TABISH TAPAL
Chief Executive Officer,
Tapal Energy (Private) Limited.

1.2.2 MR. MUSTAFA LAKDAWALA
Chief Financial Officer,
Tapal Energy (Private) Limited.

SECTION 2
INTRODUCTION TO PETITIONER
&
THE PROJECT

JA

FILE-7

2. INTRODUCTION TO PETITIONER & THE PROJECT

2.1 THE PETITIONER & PROJECT DEVELOPMENT BACKGROUND

2.1.1 **TAPAL ENERGY (PRIVATE) LIMITED** (a company duly established and existing under the laws of Pakistan with its registered office located at 155-A, Street No. 37, Sector F-10/1, Islamabad, Pakistan) (the **Petitioner**), being the petitioner under this tariff petition (this **Tariff Petition**) for approval and grant of a reference generation tariff (the **Reference Generation Tariff**), was set up and established on March 1, 1995, for the purposes of undertaking the project (the **Project**) relating to the development, setting up, implementation, construction and operation of a 126 MW (Gross) thermal power generation facility (the **Facility**) located at Deh Gondpass, Tapo Gabopat, Hub River Road, Taluka & District Karachi (West), Karachi, Sindh, Pakistan (the **Site**).

2.1.2 The following supporting documents relating to the Petitioner are attached herewith as follows:

- (a) ANNEXURE A (*Shareholding Pattern*);
- (b) ANNEXURE B (*Memorandum and Articles of Association*); and
- (c) ANNEXURE C (*Certificate of Incorporation*).

2.1.3 It is highlighted that the Project was undertaken and implemented pursuant to Government of Pakistan's (the **GoP**) "Policy Framework and Package of Incentives for Private Sector Power Generation Projects In Pakistan" dated March 1994 (the **1994 Power Policy**). Key milestones relating to the developmental phase of the Project are noted below:

MILESTONE	DATE OF ACHIEVEMENT
Submission of application	June 16, 1994
Issuance of Letter of Interest	June 28, 1994
Issuance of Letter of Support	September 18, 1994
Date of Financial Closing	April 18, 1996
Commissioning Date	June 20, 1997

2.2 THE CONTRACTUAL ARRANGEMENTS

2.2.1 For the purposes of the Project, the Petitioner entered into various contractual arrangements, which included the following:

MILESTONE	DATE OF ACHIEVEMENT
IMPLEMENTATION AGREEMENT	August 8, 1995

F/A-9

POWER PURCHASE AGREEMENT	September 26, 1995
FUEL SUPPLY AGREEMENT	March 7, 1996
GOP GUARANTEE	April 18, 1996

2.2.2 In addition, the Petitioner also entered:

- (a) engineering, procurement and construction (EPC) arrangements for the Facility with world-class EPC contractors /suppliers Power Construction Company BV of Holland, Wartsila Diesel and ABB Industry of Finland; and
- (b) operations and maintenance contractual arrangements with Wartsila Diesel Pakistan (Private) Limited and subsequently with Sithe Mauritius Power Services.

2.2.3 It is however highlighted that since past Ten (10) years, the Petitioner has been operating and maintaining the Facility through its experienced and highly skilled in-house resources and the performance of the Facility (including its efficiency and reliability) are evidence of its in-house team's excellence.

2.3 THE PROJECT SPONSORS

2.3.1 TAPAL GROUP

THE TAPAL GROUP, principals of **AMEEJEE VALLEEJEE & SONS (PVT.) LIMITED (AVS)** was established in 1867. AVS has wide experience in the engineering and construction related activities ranging from ship building to barge construction/repairs to power plants. It has represented some of the most renowned international companies such as ABB, Chint, Streinmuller, Lurgi, Standard Kessel, Henkels, Dorr Oliva, Atlas Copco etc. in Pakistan and has been instrumental in development of the economy of the Pakistan. The Tapal Group currently holds 50% (fifty percent) of the shareholding in the Petitioner and is responsible for the management of the Petitioner.

2.3.2 SITHE MAURITIUS LIMITED

SITHE MAURITIUS LIMITED (SML) is a private limited company, an entity set up and 100% owned (as an investment holding company) by **MARUBENI CORPORATION (Marubeni)**. SML currently holds 50% (fifty percent) of the share capital in the Petitioner.

Marubeni is one of the leading trading and investment houses of Japan that was founded in May 1858. It has 131 branches and offices in 66 countries and is involved in a broad range of sectors on global level including, *inter alia*, power, food materials, food products, textiles, materials, pulp and paper, chemicals, energy, metals and mineral resources and transportation machinery. Marubeni has 39,952 employees within its group and total assets of around USD 62 billion.

Marubeni is very active in the power sector industry, it owns and operates 52 I(W)PP projects with a total gross capacity of 40,094 MW globally.

Marubeni's role in the IPP business includes development, financing, equity participation as well as engineering, procurement, and construction and operation and maintenance. Marubeni operates IPP projects in around 23 countries around the world, including

Pakistan, Tunisia, U.A.E, Saudi Arabia, Qatar, Oman, Turkey, Portugal, United Kingdom, Jamaica, Trinidad and Tobago, Chile, Australia, U.S.A, the Philippines, Thailand, Taiwan, India, Indonesia, Cambodia, Singapore, and Korea. In addition, Marubeni is an active player in the EPC businesses and has built over 110,108 MW of power plants worldwide.

WA

SECTION 3
BACKGROUND TO THIS TARIFF PETITION

JA

F/A-6

3. BACKGROUND TO THIS TARIFF PETITION

3.1 THE POWER PURCHASE AGREEMENT

- 3.1.1 / For the purposes of, *inter alia*, sale of the power generated by the Facility and to set out the terms and conditions relating to the same, the Petitioner entered into an agreement entitled 'POWER PURCHASE AGREEMENT' dated September 26, 1995 (the **Power Purchase Agreement**) with **K-ELECTRIC LIMITED** – formerly Karachi Electric Supply Corporation Limited (*a public limited company duly established and existing under the laws of Pakistan with its registered office located at KE House, 39-B, Sunset Boulevard, Phase-II, Defence Housing Authority, Karachi, Pakistan*) (**KE**).
- 3.1.2 / It is highlighted, specifically for the purposes of this Tariff Petition, that the current term of the Power Purchase Agreement, as set out therein in terms of its section 4.1(a), is twenty-two (22) years, unless terminated earlier (the **Current PPA Term**). /
- 3.1.3 In addition, it is noted that the Power Purchase Agreement also contemplates a mechanism for renewal of the Power Purchase Agreement prior to its expiry in terms of its section 4.1(c), which states as follows:

"Following the end of the twentieth (20th) Agreement Year, at the request of either Party, the Company and KESC agree to enter into good faith negotiations for a renewal of this Agreement for an additional term of five (5) Agreement Years on terms and conditions mutually agreed to by the Parties."

- 3.1.4 It is highlighted that the Petitioner, as part of performance of its obligations under the Power Purchase Agreement, has a very significant role in supply of power to the west side of KE transmission network as the entire power generated by the Petitioner is transmitted to KE grid stations of Baldia and Hub – the same being the power suppliers to major industrial and commercial customers of KE. During the peak months, the Facility runs as a base load plant that dispatches as high as ninety-five percent (95%).

3.2 THE CONTEMPLATED EXTENSION OF THE TERM OF THE POWER PURCHASE AGREEMENT

- 3.2.1 / Considering, *inter alia*, that the Petitioner has successfully operated its Facility; has catered for KE's consumer requirements by generating around 745.543 GWH per annum; and has met its obligations under the Power Purchase Agreement for over twenty-one (21) years, the Petitioner and KE, in pursuance of their rights emanating from section 4.1(c) of the Power Purchase Agreement, have been engaged in discussions for extending the term of the Power Purchase Agreement for an additional period of five (5) years (the **PPA Term Extension**), it being submitted that the PPA Extension Term shall commence on June 20, 2019 (the **Extension Commencement Date**). / It is noted that the terms and conditions for the PPA Term Extension, as to be set out in a revised and amended power purchase agreement (the **Revised Power Purchase Agreement**) are still being awaited from the Power Purchaser – a matter (including its effects) are further discussed in latter Sections of this Tariff Petition.

3.3 THE KE CONSENT

- 3.3.1 / It is highlighted, for the Authority's benefit, that the Petitioner has already requested KE to issue a letter of consent to purchase power for the PPA Term Extension. In response to the Petitioner's request, KE has issued its consent vide KE's letter (Ref No. BD/AH/TEL-0286/2018-1022) dated October 22, 2018 (the **KE Power Purchase Consent**) to purchase

F/A - 1

power during the PPA Term Extension. A copy of the KE Power Purchase Consent is attached hereto at ANNEXURE D (*KE Power Purchase Consent*). The Petitioner takes this opportunity to highlight that in the KE Power Purchase Consent, KE as follows:

"the continued availability of [the Facility] is an integral part of our strategy to meet our future demand and its contribution to the system stability of the 132kV network due to [the Facility's] strategic location in Karachi's North West zone."

3.4 POWER ACQUISITION REQUEST SUBMITTED BY KE TO THE AUTHORITY

3.4.1 Following issuance of the KE Power Purchase Consent, the Petitioner submitted a Power Sale Proposal to KE on October 31, 2018 to which KE has provided its consent to the Petitioner, vide its letter dated December 4, 2018 (the **KE Consent for Tariff Application**) facilitating the Petitioner in respect of submission of its application to the Authority for the reference generation tariff for the PPA Term Extension. The KE Consent for Tariff Application is attached as ANNEXURE I-1 (*KE Consent for Tariff Application*) for the Authority's ready reference.

3.4.2 Additionally, KE has also submitted a power acquisition request to the Authority vide its letter (Ref No. SBD/AR/NEPRA-0312/2018-0412) dated December 4, 2018 (the **Power Acquisition Request**) requesting the Authority to allow KE to acquire power from the Petitioner for the PPA Term Extension, while supporting the same with details such as the overview of the power sale proposal of the Petitioner. The Power Acquisition Request is attached as ANNEXURE I-2 (*Power Acquisition Request*) for the Authority's ready reference. The Petitioner take this opportunity to highlight that in the Power Acquisition Request, KE once again highlights as follows:

"to ensure adequate supply of power to meet the growing power demand of the city, in addition to the expected pipeline of planned projects which shall come online in next few years, the continuity of the existing sources of power supply in the next five year is an essential part of K-Electric's strategy to fulfill the increasing power demand".

3.4.3 The integral nature of the Facility's continued operation to KE's strategy in meeting its future demand and maintaining system stability is corroborated further by KE having filed a power acquisition request for acquisition of power from the Petitioner prior to submission by the Petitioner of its Reference Generation Tariff petition. Summarily, the Petitioner and KE are committed to the PPA Term Extension and will satisfy all regulatory requirements to achieve the same.

3.5 THIS APPLICATION FOR APPROVAL OF REFERENCE GENERATION TARIFF

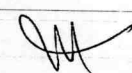
3.5.1 Based on the KE Power Purchase Consent, Power Acquisition Request and in view of the submissions set out herein, the Petitioner has prepared and hereby submits before the Authority this Tariff Petition for approval of the Reference Generation Tariff that will apply during the PPA Term Extension.

3.6 SUBMISSION

3.6.1 PURSUANT TO the applicable laws of Pakistan, including the NEPRA Act and the rules and regulations made thereunder: **TAPAL ENERGY (PRIVATE) LIMITED HEREBY SUBMITS**, for the Authority's kind and gracious consideration, this Tariff Petition for approval of its Reference Generation Tariff to cater for and which shall apply, in each case, the PPA Term Extension.

3.6.2 This Tariff Petition is submitted in triplicate.

3.6.3 This Tariff Petition is being submitted with the required fee (as communicated by the Authority) through a non-refundable bank draft/pay order in the amount of PKR 1,629,760/- (Pakistani Rupees One Million Six Hundred and Twenty-Nine Thousand Seven Hundred and Sixty Only) dated December 5, 2018 drawn in favor of the Authority.



SECTION 4
THE FACILITY

SM

4. THE FACILITY

4.1 THE FACILITY TECHNICAL SUMMARY

- 4.1.1 The Facility owned, operated and maintained by the Petitioner has, over two (2) decades, been a source of supply of reliable power generation for the Power Purchaser and is exemplary in the country's power sector. Briefly, the salient technical features of the Facility, as certified and confirmed in the detailed and exhaustive remaining useful life assessment (RULA) study contained in the report entitled "*Remaining Useful Life Assessment (RULA) Study Report*" dated 1st October, 2018 and authored by the renowned engineering consultant, M/S CONTINENTAL MARINE ENERGY SDN BHD (CME), MALAYSIA, as attached hereto in ANNEXURE H (*Remaining Useful Life Assessment (RULA) Study Report*) (the RULA Study Report), are provided below for the Authority's reference:

FACILITY GROSS CAPACITY	126 MW
NET DEPENDABLE CAPACITY	123.5 MW
FUEL & TECHNOLOGY	HFO/LFO – Diesel Engine, Stork - Wartsila, Model 18V38
FACILITY CONFIGURATION	12 Internal Combustion Diesel Engines

- 2.3.3 Further, it is highlighted that the Facility (also confirmed by the RULA Study Report):

- (a) was designed, engineered and constructed by POWER CONSTRUCTION COMPANY BV of Holland with WARTSILA DIESEL and ABB INDUSTRY of Finland being the equipment suppliers;
- (b) was designed for continuous operation on heavy fuel oil with start and stops on light fuel oil;
- (c) is equipped with modern fuel handling, storage and purification system;
- (d) has an operation method that is automatic, with automatic synchronizing and load sharing using a PLC based control system; and
- (e) generates power at 11 kV, which is stepped up to 132 kV through three main transformers and subsequently supplied to the power purchaser's grid system.

- 2.3.4 In addition, for the Authority's benefit and reference, without in any way limiting the comprehensive analysis presented in the RULA Study Report, section 13 (*Conclusion & Recommendation*) is set out below:

"13.0 Conclusion & Recommendations

The study carried out to assess the condition of engines and critical electrical components covering generator and power transformer concluded with ratings Very Good, Good and Acceptable condition and expected remaining useful life. It is pertinent to mention that the qualitative condition assessment and expected life is based on good O&M management practices, well maintained inspection,

maintenance and other monitoring records, timely execution of inspection and maintenance work order, replacement of component as per preventive spares and follow instructions of troubleshooting as per OEM practices.

Based on study, following recommendations are made:

- (a) The overall condition of Engines is 'Good', and the expected remaining life is 10 years. The condition of Generator units is generally found to be in range from 'Good' to 'Acceptable' with expected safe remaining useful life of up to 10 years. The condition of all Power Transformers have been found to be 'Very Good' with expected life more than 15 years.*
- (b) The condition of storage tanks at the plant facility is 'Very Good'. Despite the quantitative remaining life reported in the recent inspection reports are suggesting beyond 15 years. However, due to aging corrosion is expected to increase specially at attachments (Nozzles, Saddles, Staircase and other Structure, base plates, top sides of tanks etc.). At present, the rates of corrosion currently are under acceptable limits. More robust risk based inspection and fabric maintenance, coating and external inspection monitoring over the years is needed together with audits of the safety and fire systems.*
- (c) Tapal Energy (Pvt.) Ltd. (the Asset Owner) to continue existing O&M Practices for the upkeep of the assets, follow OEM recommended guidelines for the time driven maintenance and inspection of engines and other critical assets.*
- (d) Asset Owners may evaluate the requirements for further Condition Based Maintenance practices, such as continued focus on Vibration Monitoring, Thermographic Imaging and other use of NDT advanced methods (Acoustics). This can be done by independent plant machinery vibration analysis methods at a periodic level. The objective is to collect data, identify vibration zones and therefore, based on these studies improve Maintenance strategy and control on aging, failures and leakages.*
- (e) Some of the critical Engine components such as Camshaft, Pistons, and its associated mechanical components require continued focus in the inspection and maintenance reporting e.g. photographic recordings, sample micro examination of cam shaft wear etc. The objective is to capture signs of wear, aging etc. It is also recommended that OEM guidelines for the camshaft inspection pertaining to wear may be consulted for further improvement in inspection reporting.*
- (f) It is recommended that condition assessment methodology followed in this study be practiced at regular levels to validate the findings. Next Condition Assessment can be done in 5 years (2023) and further ascertain the expected life of engines and critical machinery components and other assets. The condition assessment may support asset owner in cost benefit and end of economic life assessments to benefit the business.*
- (g) It is recommended to follow the testing and inspection activities as suggested through LEAP test results for all Generators in order to ensure the updated assessment of their conditions and subsequent corrective actions (if any) to be taken."*

2.3.5 Considering the afore-stated, the matters set out herein and the conclusions drawn in the RULA Study Report, the Petitioner expects and intends to operate the Facility for at least another ten (10) years. Thus, the Petitioner submits to the Authority, so that the Petitioner may continue to generate power for sale to KE, to approve the Reference Generation Tariff to ensure implementation of the PPA Term Extension – it being clearly evident, as

confirmed by, *inter alia*, the RULA Study Report, that the remaining power generation life of the Facility is beyond the period contemplated by the PPA Term Extension.

SECTION 5
THE GENERATION LICENSE

5. THE GENERATION LICENSE

5.1 THE GENERATION LICENSE

- 5.1.1 In January 1997, the Petitioner initially obtained a license under the Electricity Act, 1910 following satisfaction of the required legal requirements.
- 5.1.2 Following enactment of '*Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997*' (the **NEPRA Act**) and the rules and regulations made thereunder, the Petitioner applied to the **NATIONAL ELECTRIC POWER REGULATORY AUTHORITY** (the **Authority**) for procurement of a generation license for its Facility and on August 26, 2003, the Authority granted the Petitioner a generation license No. IPGL/010/2003 (the **Generation License**). A copy of the Generation License is attached herewith at **ANNEXURE E (Copy of Generation License)** for the Authority's reference.

5.2 THE GENERATION LICENSE FIRST MODIFICATION

- 5.2.1 It is highlighted for the Authority's benefit that the Petitioner previously submitted an application dated May 22, 2018 (the **Generation License First Modification Application**) for modification of its Generation License. The reason for submission of the Generation License First Modification Application was to request for an extension of the term of the Generation License in order to bring the same in line with the current full term of its Power Purchase Agreement i.e. till June 19, 2019.
- 5.2.2 The Authority's approval in relation to the Generation License First Modification Application was received by the Petitioner vide the Authority's approval dated November 20, 2018 (the **NEPRA First Modification Approval**) through which the term of the Generation License of the Petitioner was extended up to June 19, 2019. The NEPRA First Modification Approval is attached herewith as **ANNEXURE F (NEPRA First Modification Approval)** for the Authority's ready reference.

5.3 THE GENERATION LICENSE SECOND MODIFICATION APPLICATION

- 5.3.1 The Authority is submitted that for the purposes of, *inter alia*, extension of the term Generation License to remaining useful power generation life of the Facility, a term much beyond the PPA Term Extension, and in order to comply with the applicable laws of Pakistan, the Petitioner has, submitted an application for modification of its Generation License vide its letter no. TEL/NEPRA/009/19 dated November 29, 2018 so that the term of the Generation License is extended up to the remaining useful power generation life of the Facility, as per the RULA Study – a matter submitted in Section 4 (The Facility) above (the **Generation License Second Modification Application**).
- 5.3.2 It is submitted that the Petitioner, in its Generation License Second Modification Application, has requested the Authority that the modifications requested in its Generation License Second Modification Application are construed in light of and read in conjunction with the modifications approved in the Generation License First Modification Application. It is therefore, for abundant clarity, noted that that the Generation License Second Modification Application has been submitted to Authority vide letter no. TEL/NEPRA/009/19 dated November 29, 2018 for an extension of its term beyond June 19, 2019. Acknowledged copy of Generation License Second Modification Application is attached herewith as **ANNEXURE J**.

SECTION 6
KEY CONSIDERATIONS

CM

F/A-8

6. KEY CONSIDERATIONS

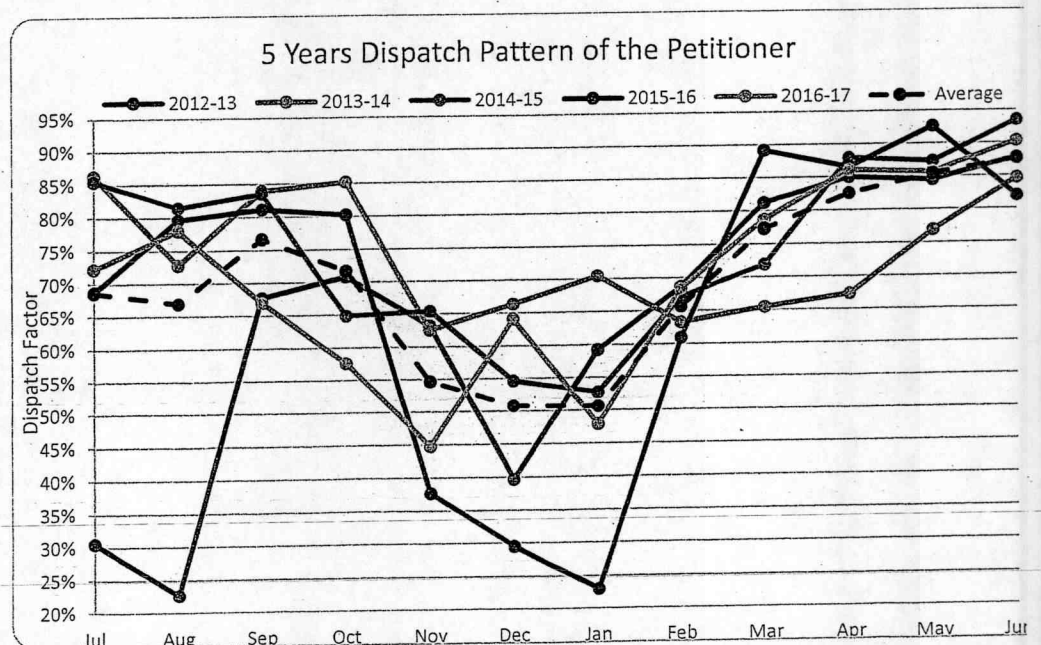
6.1 DEMAND FOR ELECTRICITY

6.1.1 The power supply shortages in Pakistan over the years have resulted in extensive hours of power outages across the country. However, the power crisis has hit Karachi evidently more than other parts and the city faces an ongoing shortage of power supply with black-outs being prevalent time and time again. It is highlighted that KE, being the only distribution/transmission company having the legal capacity to distribute/transmit electricity in Karachi, continuously faces challenges in meeting the ever-growing electricity demands of the financial hub and economic lifeline of Pakistan.

6.1.2 The Authority's approval of the Reference Generation Tariff and the subsequent implementation by KE and the Petitioner of the PPA Term Extension will ensure continued supply of reliable electricity to the consumers of KE until June 19, 2024 – a critical consideration in light of the current power generation capacity and demand in KE's distribution area

6.2 THE PETITIONER – A RELIABLE SOURCE OF POWER GENERATION

6.2.1 The Petitioner has successfully operated its Facility; has catered for KE's consumer requirements by generating at an average of 745.543 GWh per annum; and has met its obligations under the Power Purchase Agreement for over twenty-one (21) years (commencing from 'Commercial Operations Date' (as defined in the Power Purchase Agreement)). The Petitioner has a very significant role in supply of power to the west side of KE transmission network as the entire power generated by the Petitioner is transmitted to KE grid stations of Baldia and Hub – the same being the power suppliers to major industrial and commercial customers of KE. It is highlighted that during the peak months, the Facility runs as a base load plant that dispatches as high as 95%. The monthly load pattern of dispatch from the Facility is set out below for the Authority's reference and the same evidences the Facility's contribution during the peak summer months and the Petitioner's role as part of the embedded generation projects of KE:



- 6.2.2 The use of the Petitioner's Facility as a black start facility by KE, in case of wide spread power outage, was provided in the past and if required by KE, shall continue to be provided to KE during the PPA Term Extension.

6.3 THE PETITIONER – AN EXPERIENCED POWER PRODUCER

- 6.3.1 The Petitioner has been in the business of generating and selling electricity since 1997. The Petitioner, with its extensive experience of over two (2) decades, has not only satisfied its obligations under the Power Purchase Agreement during such period 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 excellence in power generation is widely recognized – with its business practices being considered as a gold standard in the industry.

6.4 THE FACILITY

- 6.4.1 As highlighted in Section 4 (*The Facility*) of this Tariff Petition, the Facility's remaining useful life is more than Ten (10) years and the same is well beyond the period relating to the PPA Term Extension. With highly efficient and reliable European equipment and machinery being fundamental to the Petitioner's success as a power producer for over Two (2) decades, it is submitted that due consideration is given by the Authority to the benefits that be driven from the continuation of the use of the Facility.

6.5 THE PPA TERM EXTENSION – A HIGHLY COST-EFFECTIVE PROPOSITION

- 6.5.1 It is submitted that with the current state of the well maintained and 'debt free' Facility with no requirement for any major or extravagant capital expenditures required for the continued use of the Facility, the consumers will ultimately benefit from the low cost of electricity supplied by the Petitioner during the period of the PPA Term Extension.

6.6 ALL REQUISITE INFRASTRUCTURE & ARRANGEMENTS ALREADY IN PLACE

- 6.6.1 Unlike the complexities and long gestation periods involved in the development of a new power generation facility, the Project, being operational now over Two (2) decades, has all requisite contractual arrangements and other infrastructure requirements in place to continue power generation for servicing the consumers of Pakistan largest city. It is noted that implementation of the PPA Term Extension will neither require a financial close from lenders nor construction of any new transmission lines. With an offtake arrangement already in place and KE itself being a strong supporter of the PPA Term Extension, the true benefits of the proposed PPA Term Extension are submitted to be duly considered by the Authority for the benefit of the consumers and in the Authority's approval of the Reference Generation Tariff.

6.7 DEVELOPMENT & CONTINUED DEPLOYMENT OF EXCEPTIONAL HUMAN RESOURCES

- 6.7.1 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. While the Petitioner entered into operations and maintenance contractual arrangements with WARTSILA DIESEL PAKISTAN (PRIVATE) LIMITED and subsequently with SITHE MAURATIUS POWER SERVICES for the operations and maintenance of the Facility in the initial years, it is highlighted that since the past ten (10) years, the Petitioner has been carrying out the operations and maintenance of the Facility solely through its technically trained in-house resources. The Petitioner's in-house resources include experienced and highly skilled personnel capable of performing the operations and maintenance of the Facility, including services in relation to overhauls, major and routine

maintenances with minimum input from the original equipment manufacturers. The performance of the Facility (including its efficiency and reliability) are evidence of the Petitioner's in-house team's excellence and, as a result, implementation of the PPA Term Extension will ensure continuation of such un-parallel efforts.

6.8 INITIAL PROJECT COST & FINANCING

6.8.1 It is noted that the initial cost of development and setting up the Project was funded on the basis of a debt to equity ratio of 75:25. Further, it is submitted that while the entire debt was retired by the Petitioner by 2004, the initial equity of USD 33.774 million, considering the Project was set up on a Build Own Operate (BOO) basis, was never redeemed and still remains invested in the Project. The Petitioner, subject to approval of the Reference Generation Tariff and the execution of the Revised Power Purchase Agreement, aims to retain the equity in the Project and form, at the very minimum, the basis of continued operations during the PPA Term Extension.

6.8.2 In addition, the Petitioner requests the Authority's appreciation of the fact that that besides the initial equity, the Project sponsors have endlessly, to date, endeavored to continuously improve and maintain the Facility through substantial investments in major overhauls and replacement of parts and components in accordance with the parameters and world class standards prescribed by the original equipment manufacturers – hence assuring the reliability envisaged during the PPA Term Extension.

SECTION 7
REFERENCE GENERATION TARIFF SUMMARY

SM

7. REFERENCE GENERATION TARIFF SUMMARY

7.1 THE REFERENCE GENERATION TARIFF COMPONENTS

7.1.1 In view of the Authority's previous tariff determinations and the prevailing take or pay regime for thermal independent power producers (the **IPPs**) in Pakistan, the Reference Generation Tariff is broken down in the following two key components:

- (a) the energy purchase price component of the Reference Generation Tariff (the **Energy Purchase Price**); and
- (b) the capacity purchase price component of the Reference Generation Tariff (the **Capacity Purchase Price**).

7.2 THE SUMMARY

7.2.1 Based on the residual fuel oil (the **RFO**) price of PKR 42,282.71/ton (HHV) (price includes the fuel transportation cost of PKR 364.71, subject to adjustment as per actuals), an output of 123.5 MW (net at reference site conditions) and detailed financial analyses, the proposed Reference Generation Tariff is hereunder:

	ENERGY PURCHASE PRICE	CAPACITY PURCHASE PRICE	TOTAL REFERENCE GENERATION TARIFF	TOTAL REFERENCE GENERATION TARIFF
	US ¢/kWh	US ¢/kW/h	US ¢/kWh	PKR/kWh
LEVELIZED TARIFF	9.3110	1.0387	10.3498	11.4365
AVERAGE TARIFF	9.3110	1.0387	10.3498	11.4365

TOTAL REFERENCE GENERATION TARIFF	
AVERAGE (1-5 YEARS) :	US CENTS 10.3498/kWh (or PKR 11.4365/kWh)
LEVELIZED TARIFF :	US CENTS 10.3498/kWh (or PKR 11.4365/kWh)

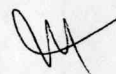
7.3 REDUCTION IN TARIFF OFFERED BY THE PETITIONER

A comparison of the tariff under the current expiring Power Purchase Agreement calculated on the reference parameters used in this Tariff Petition, with the Reference Generation Tariff (as requested under this Tariff Petition) is as below:

	ENERGY PURCHASE PRICE	CAPACITY PURCHASE PRICE	TOTAL REFERENCE GENERATION TARIFF	TOTAL REFERENCE GENERATION TARIFF
	US ¢/kWh	US ¢/kW/h	US ¢/kWh	PKR/kWh
Tariff as per existing Power Purchase Agreement calculated at reference parameters of this Tariff Petition	9.5303	1.5531	11.0834	12.2472
Proposed Reference Generation Tariff requested in this Tariff Petition	9.3110	1.0387	10.3498	11.4365
Reduction	0.2193	0.5144	0.7337	0.8107

7.4 THE REFERENCE GENERATION TARIFF TABLE

- 7.4.1 For the Authority's benefit and approval, the detailed table setting out the Reference Generation Tariff (the **Reference Generation Tariff Table**) is attached hereto at ANNEXURE G (*Reference Generation Tariff Table*).



SECTION 8
ENERGY PURCHASE PRICE

JA

8. ENERGY PURCHASE PRICE

8.1 SUMMARY

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

- (a) the fuel component (the **Fuel Cost Component**);
- (b) the local variable O&M component (the **Local Variable O&M Cost Component**); and
- (c) the foreign variable O&M component (the **Foreign Variable O&M Cost Component**).

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

ENERGY PURCHASE PRICE - PKR/kWh				
PERIOD	FUEL COST COMPONENT	FOREIGN VARIABLE O&M COST COMPONENT	LOCAL VARIABLE O&M COST COMPONENT	TOTAL ENERGY PURCHASE PRICE
YEARS 1-5	9.3681	0.6785	0.2421	10.2887

8.1.3 It is noted that after factoring the impact of fuel cleaning, average plant aging, temperature deration and variation in plant load factor, 40.04% net complex efficiency (LHV) at mean site conditions, at 100% Load Factor, running on RFO, is guaranteed.

8.2 FUEL COST COMPONENT

8.2.1 ASSUMPTIONS

The cost of fuel consumption for the Facility, assuming thermal efficiency of 40.04% (LHV) at 100% capacity factor (subject to part load adjustment and temperature de-rating curve), represents the Fuel Cost Component of the Energy Purchase Price. The main assumptions used to derive at the Fuel Cost Component are provided below:

RFO PRICE:	PKR 42,282.71 per ton (HHV) (including transportation cost of PKR 364.71, subject to adjustments as per actuals). GST is not included in the RFO Price and shall be a pass-through to KE at actuals
HEAT RATE:	8,991.89 KJ/kWh (LHV) at 100% capacity factor
OUTPUT CAPACITY:	123.5 MW (net at Site reference conditions)
CALORIFIC VALUE:	40,584.80 KJ/Kg (LHV)
LHV-HHV FACTOR	1.05

GST ON FUEL

the actual GST charged on the Fuel Cost Component of Tariff is to be claimed at actuals from KE through monthly supplemental invoice.

8.2.2 INDEXATION & ESCALATION

The Fuel Cost Component shall be adjusted on account of:

- (a) Fuel price variation of Fuel consumed using FIFO method during period of PPA Term Extension; and
- (b) the actual transportation charges.

8.2.3 INDEXATION FORMULA

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

$$FC_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * FP_{(Rev)} / FP_{(ref)}$$

Where:

$FC_{(Rev)}$ = Revised Fuel Cost Component

$FP_{(Ref)}$ = PKR 42,282.71 per ton (including transportation cost of PKR 364.71, subject to adjustment as per actuals)

$FP_{(Rev)}$ = The new price of RFO per metric ton with freight (as per actuals) excluding GST

8.3 LOCAL VARIABLE O&M COST COMPONENT**8.3.1 ASSUMPTIONS**

This component includes the cost of those lubricant and chemical consumed on generation of power and are directly related to the electricity actually generated. The rate will be indexed to the prevailing CPI of Pakistan. GST charged at prevailing rates on this component shall be passthrough at actuals and is to be claimed through separate monthly Supplemental Invoice

8.3.2 INDEXATION AND ESCALATION

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

8.3.3 INDEXATION FORMULA

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

$$VO\&M_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * \frac{CPI_{(Rev)}}{CPI_{(Ref)}}$$

Where:

$VO\&M_{(LRev)}$ = the revised applicable Local Variable O&M Cost Component of the Energy Purchase Price, quarterly indexed to CPI of Pakistan.

$CPI_{(Rev)}$ = the revised CPI of Pakistan, as notified by The Federal Bureau of Statistics.

$CPI_{(Ref)}$ = the 220.27 CPI of in Pakistan for January 2018
as notified by the Federal Bureau of Statistics.

8.4 FOREIGN VARIABLE O&M COST COMPONENT

8.4.1 ASSUMPTIONS

This component primarily includes imported spare parts to be replaced on normal scheduled maintenance and unscheduled maintenance. Also, it includes specialized technical services from manufacturer during maintenance of the Facility. The generation sets, and associated equipment require overhauling as per manufacturer's recommended schedules, which are based on actual running hours. The actual timing of the major overhauls depends on dispatch of the Facility. GST charged at prevailing rates on this component shall be passthrough at actuals and is to be claimed through separate monthly supplemental invoice

8.4.2 INDEXATION AND ESCALATION

The Foreign Variable O&M Cost Component of the Energy Purchase Price shall be quarterly indexed to both:

- (a) the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by National Bank of Pakistan; and
- (b) the US CPI, as issued by the US Bureau of Labor Statistics.

8.4.3 INDEXATION FORMULA

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

$$VO\&M_{(FRev)} = \frac{\text{Relevant Reference Generation Tariff Component} *}{US\ CPI_{(Rev)} / US\ CPI_{(Ref)} * (USD_{(Rev)} / USD_{(Ref)})}$$

Where:

- $VO\&M_{(FRev)}$ = the revised applicable Foreign Variable O&M Component of the Energy Purchase Price quarterly indexed to US CPI and USD/PKR exchange rate variation.
- $US\ CPI_{(Rev)}$ = the revised US CPI, as published by the US Bureau of Labor Statistics.
- $US\ CPI_{(Ref)}$ = the US CPI, 247.867 for January 2018 as published by US Bureau of Labor Statistics.
- $USD_{(Rev)}$ = the revised TT & OD selling rate of USD, as notified by the National Bank of Pakistan.
- $USD_{(Ref)}$ = PKR 110.50.

SECTION 9
CAPACITY PURCHASE PRICE

SM

9. CAPACITY PURCHASE PRICE

9.1 SUMMARY

9.1.1 The Capacity Purchase Price component of the Reference Generation Tariff is payable on the basis of available capacity declared periodically from the Extension Commencement Date. This component is calculated on PKR/kW/h basis of available capacity including outage allowances allowed as per PPA. 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 insurance cost (the **Insurance Cost Component**);
- (c) the cost of working capital (the **Cost of Working Capital Component**); and
- (d) the return on equity (the **ROE**).

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

PERIOD	LOCAL FIXED O&M COST COMPONENT	INSURANCE COST COMPONENT	COST OF WORKING CAPITAL COMPONENT	ROE COMPONENT
	PKR/kW/h	PKR/kW/h	PKR/kW/h	PKR/kW/h
Years 1-5	0.3932	0.0817	0.1554	0.5175

9.2 LOCAL FIXED O&M COST COMPONENT

9.2.1 ASSUMPTIONS

The Local Fixed O&M Component of the Capacity Purchase Price represents the fixed costs of the management and staff of the Project; fixed cost of staff for operations and maintenance and firefighting; plant administration; security; motor pool; transportation and its insurance; overheads; office costs; environmental monitoring fee, professional fees such as audit, tax and legal; as well as some minor fixed operational costs that are of recurring nature and do not change with dispatch levels.

The Company has only claimed for local Fixed O&M component on the assumption that the operation and maintenance of the plant shall be carried out through Company's resources and will not be outsourced. Although the level of uncertainty and operational risk increases many folds when the Company operates or maintains its own plant as it has no recourse from any contractor for recovery of any performance penalties imposed by the power purchaser, yet this component is reasonably priced. It may further be noted that unlike the structure followed by many O&M Contractors, the Petitioner's proposed structure will not require any foreign component of Fixed O&M tariff. This will protect the power purchaser from variation in foreign exchange rates and will also save the country from valuable foreign exchange being remitted by the foreign O&M Contractors as fees and remuneration for their expatriate employees.

The Fixed O&M costs estimates claimed by the Company are comparable to the Fixed O&M component allowed by NEPRA to IPPs with similar technology.

9.2.2 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 CPI of Pakistan, as notified by the Federal Bureau of Statistics.

9.2.3 INDEXATION FORMULA

9.2.3.1 Local Fixed O&M Cost Component

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

$$\text{LFO\&M}_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * \frac{\text{WPI}_{(Rev)}}{\text{WPI}_{(Ref)}}$$

Where:

$\text{LFO\&M}_{(LRev)}$ = the revised Local Fixed O&M Component of the Capacity Purchase Price quarterly indexed to CPI of Pakistan.

$\text{CPI}_{(Rev)}$ = the revised CPI of Pakistan, as notified by the Federal Bureau of Statistics.

$\text{CPI}_{(Ref)}$ = the CPI of Pakistan for the month of January 2018, was 220.27 as notified by the Federal Bureau of Statistics.

9.3 INSURANCE COST COMPONENT

9.3.1 ASSUMPTIONS

The Insurance cost component consists of the customary industry wide covers taken for all-risk insurance/reinsurance for the Project, as well as for business interruption insurance. The insurance cost considered for the extended term is based on actual annual premium paid for 2018-19 charged for the said cover at USD 800,000 p.a. with the assumption that NEPRA will allow indexation of this component to its actual cost paid to the insurance company as per prevailing international insurance market pricing for the required coverage.

9.3.2 INDEXATION & ESCALATION

The Insurance Cost Component shall be annually indexed. The actual insurance cost for the cover required under contractual obligations with the Power Purchaser, will be treated as pass through.

9.3.3 INDEXATION FORMULA

Insurance component of reference tariff shall be adjusted annually as per actual cost paid by the Company according to the following formula:

$$\text{AIC} = \text{Ins (Ref)} / \text{P (Ref)} * \text{P (Act)}$$

Where

AIC = Adjusted insurance component of tariff

Ins (Ref) = Reference insurance component of tariff

P (Ref) = Reference premium

P (Act) = Actual premium

9.4 COST OF WORKING CAPITAL COMPONENT

9.4.1 ASSUMPTIONS

A working capital (the **Working Capital**) of USD 18.642 Million shall be required in order to finance:

- (a) the inventory level of RFO equivalent to 15 days of generation at 100% load factor;
- (b) energy payments receivables along with GST for credit period of 30 days allowed to the power purchaser from the date of invoicing; and
- (c) average of 15 days cost taken for fuel required for one month of operation prior to invoicing

The cost of Working Capital is assumed at 8.16% (3 months KIBOR (6.16%) + 2% spread).

9.4.2 INDEXATION & ESCALATION

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

- (a) the average of Fuel price variation during the quarter; and
- (b) the quarterly changes in the 3 month KIBOR.

9.4.3 INDEXATION FORMULA

The Cost of Working Capital Component shall be indexed based on the following formula:

$$\frac{CWC_{(Rev)} = CWC_{(Ref)} * (FP_{(Rev)} / \text{Fuel Base Rate}) * (Kibor_{(Rev)} - Kibor_{(Ref)}) / 4}$$

Where:

$CWC_{(Rev)}$	=	Revised Cost of Working Capital component.
$CWC_{(Ref)}$	=	Reference Cost of Working Capital
Fuel Base Rate	=	PKR 42,282.71 per ton (HHV) (including transportation cost of PKR 364.71, subject to adjustment as per actuals).
$FP_{(Rev)}$	=	The average of quarterly price of RFO per Metric Ton with GST and freight.
$Kibor_{(Rev)}$	=	The revised 3 month KIBOR rate at the end of each quarter.
$Kibor_{(Ref)}$	=	6.16%.

9.5 THE ROE

9.5.1 ASSUMPTIONS

The Reference Generation Tariff is based on the ROE calculated at an IRR rate of 15% on the equity of USD 33.774 million invested by the Petitioner that, considering that the

Project was set up on the Build Own Operate (BOO) basis, has not been redeemed to date as also submitted previously herein. In addition, the Authority is also requested to consider the rationale for the ROE on the basis that the Petitioner (including the Project sponsors) will be bearing additional risks and exposure during the PPA Term Extension due to unavailability of the risk coverage previously provided by the Implementation Agreement and the Government of Pakistan Sovereign Guarantee.

It is noted that the Authority allows (and has allowed) 15% IRR to thermal IPPs supplying dedicated power to utilities over their entire project life varying between 20, 25 or 30 years. Therefore, it is submitted that allowing similar IRR for the PPA Term Extension to the Petitioner will be consistent with the Authority's own determinations and established policy.

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.

The ROE Component of the Capacity Purchase Price is based on the following parameters:

INTERNAL RATE OF RETURN	15%
REPAYMENT OF CAPITAL	None
CORPORATE TAX RATE	0%
MINIMUM TURNOVER TAX	0%

9.5.2 INDEXATION AND ESCALATION

The ROE Component shall be quarterly indexed to the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan.

9.5.3 INDEXATION FORMULA

The ROE Component shall be indexed using the following formula:

$$ROE_{(Rev)} = \text{Relevant Reference Generation Tariff Component}^* (USD_{(Rev)} / USD_{(Ref)})$$

Where:

$ROE_{(Rev)}$ = the revised ROE Component of the Capacity Purchase Price, quarterly indexed to the USD/PKR exchange rate variation.

$USD_{(Rev)}$ = the revised TT & OD selling rate of US Dollar, as notified by the National Bank of Pakistan.

$USD_{(Ref)}$ = PKR 110.5.

SECTION 10
CRITICAL ADJUSTMENTS
&
PASS THROUGH ITEMS

SA

10. CRITICAL ADJUSTMENTS & PASS THROUGH ITEMS

10.1 ADJUSTMENTS & PASS THROUGH ITEMS

10.1.1 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 Tariff Table shall be reworked at the Extension Commencement Date to adjust the factors prevailing on the Reference Date to those prevailing on the Extension Commencement Date.
- (b) Cost of any delay in payments by the Power Purchaser beyond its due date has not been factored in the calculation of Reference Tariff and shall be allowed as additional payment according to agreed provisions for cost of delay in payments to be covered in the PPA.
- (c) Any taxes and levies etc. not factored in the Reference Generation Tariff calculation shall be treated as a pass-through item.

10.2 FORCE MAJEURE EVENTS

10.2.1 The Authority 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 Implementation 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.

10.2.2 The Petitioner requests the Authority that the afore-stated are allowed to the Project during the PPA Term Extension since:

- (a) neither KE, being the power purchaser, nor the Petitioner have any control over such Specific FMEs; and
- (b) projects on the national grid, where the government is party to the project and has control over such Specific FMEs, are allowed these pass-through payments.

10.2.3 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 restored or is able to restart.

10.3 AFFECTS RESULTING FROM THE REVISED POWER PURCHASE AGREEMENT

10.3.1 As noted in Section 3.2 (*The Contemplated Extension Of The Term Of The Power Purchase Agreement*) above, the terms and conditions for the PPA Term Extension to be set out in Revised Power Purchase Agreement are still awaited from the Power Purchaser – terms that possibly, as a result of the risk allocation contained therein or from additional cost contemplated from Revised Power Purchase Agreement, may have an effect on the proposed Reference Generation Tariff. Therefore, it is submitted before the Authority that

any cost or risks emanating from such Revised Power Purchase Agreement not already factored in the Reference Generation Tariff calculation will be, fundamentally, assumed to be a pass-through item and/or shall result in a supplemental tariff for the Petitioner.



SECTION 11
GENERAL ASSUMPTIONS

[Handwritten signature]

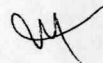
11. GENERAL ASSUMPTIONS

11.1 FOREWORD

- 11.1.1 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.

11.2 THE ASSUMPTIONS

- 11.2.1 No corporate income tax and no minimum turnover tax have been assumed.
- 11.2.2 The key assumptions are based on actual information available on the Reference Date of 1st January 2018.
- 11.2.3 Base USCPI at the reference date is 247.867 as appearing in the US Bureau of Labor Statistics publication for the month of January 2018.
- 11.2.4 The Base CPI at the reference date for all Local Tariff Components is 220.27 as published by Federal Bureau of Statistics, Pakistan in their publication for the month of January 2018.
- 11.2.5 A minimum of five years extension in the term of the PPA commencing from 20th June 2019 with each Agreement Year completing on 19th June of the following year has been assumed.
- 11.2.6 GST on electricity output is assumed to be pass-through at actual and in accordance with the special procedure given in the Sales Tax Act 1990.
- 11.2.7 Any change in taxes/duties shall be claimed as per actuals and will be passthrough to be paid by the Power Purchaser.
- 11.2.8 The prevailing statutory obligation to pay WPPF and WWF by the Company shall continue to be treated as a pass through and are to be claimed at actuals.
- 11.2.9 A constant USD based ROE is assumed which results in an IRR of 15% over the period of PPA Term Extension.
- 11.2.10 The Reference Generation Tariff is calculated based on a notional 100% plant load factor.
- 11.2.11 The price of RFO is assumed to be PKR 42,282.71/ton (HHV), which include the transportation cost of Fuel to Site at PKR 364.71, subject to adjustment at actuals.
- 11.2.12 The exchange rate has been assumed to be PKR 110.50 for PKR/USD.
- 11.2.13 All risks emanating from the Revised Power Purchase Agreement (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 and/or shall result in a supplemental tariff for the Petitioner.
- 11.2.14 Anticipated average Site conditions that have been used in the calculation of net output and heat rate are at an altitude of 65m above sea level, average ambient temperature of 30 degrees centigrade and 80% average relative humidity. If there is any change in the foregoing assumptions, the plant output and heat rate will be adjusted accordingly.

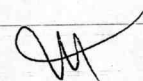


11.2.15 Facility availability of 92% (336 Complex Days) p.a. is assumed.

11.2.16 Annual Scheduled and Maintenance Outages, excluding outages on account of Power Purchaser, shall be allowed up to 701 complex hours subject to technical limits and without any liquidated damages. Liquidated damages for outages in excess thereof and their computation shall be in accordance with the Power Purchase Agreement

11.2.17 All invoicing and payment terms are assumed to be with a credit period of 30 days subject to terms and conditions given in the Revised Power Purchase Agreement.

11.2.18 All of the above assumptions and terms and conditions shall be incorporated in the Revised Power Purchase Agreement between the Petitioner and KE.



SECTION 12
CONCLUSION


MA

12. CONCLUSION

In light of the submissions, the financial analysis and information contained in this Tariff Petition, along with the Schedules attached hereto, and in the national interest of expediting the Petitioner's Facility, this Tariff Petition is submitted for NEPRA's approval of the Reference Tariff.

It is also hereby requested that the application of the Reference Generation Tariff be allowed / ordered in accordance with the NEPRA Act, the rules and regulations made thereunder, along with other enabling provisions of law.

Respectfully submitted,
FOR AND ON BEHALF OF THE PETITIONER,
TAPAL ENERGY (PVT.) LIMITED


.....
MUSTAFA LAKDAWALA
CHIEF FINANCIAL OFFICER

FA-2

Reference Tariff Table

Year	Energy Purchase Price (EPP) (Rs./kWh)				Capacity Purchase Price (CPP) @ 100% PF (Rs./kW/hr)							Total Tariff
	Fuel Component	Variable O&M - Local	Variable O&M - Foreign	Total	Fixed O&M - Local	Fixed O&M - Foreign	Cost of Working Capital	Insurance	ROE	Total		
										CPP	Rs./kW/hr	
	a	b	c	d = a+b+c	e	f	g	h	i	j	k = d + j	
1	9.3681	0.2421	0.6785	10.2887	0.3932	-	0.1554	0.0817	0.5175	1.1478	11.4365	
2	9.3681	0.2421	0.6785	10.2887	0.3932	-	0.1554	0.0817	0.5175	1.1478	11.4365	
3	9.3681	0.2421	0.6785	10.2887	0.3932	-	0.1554	0.0817	0.5175	1.1478	11.4365	
4	9.3681	0.2421	0.6785	10.2887	0.3932	-	0.1554	0.0817	0.5175	1.1478	11.4365	
5	9.3681	0.2421	0.6785	10.2887	0.3932	-	0.1554	0.0817	0.5175	1.1478	11.4365	

Average

1-5 11.4365

Levelized tariff	11.4365
Rs./kWh	
US Cents/kWh	10.3498

