
**LICENSEE PROPOSED MODIFICATION OF
GENERATION LICENSE**

OF

WESTERN ENERGY (PRIVATE) LIMITED

**50 MW WIND POWER PROJECT
AT JHIMPIR, DISTRICT THATTA, SINDH PAKISTAN**

9TH DECEMBER 2020



WESTERN ENERGY (PRIVATE) LIMITED

Registered Office: F-25 • Block 5 • Rojhan Street
Kehkashan • Clifton • Karachi - 75600 • Pakistan

Tel : +92-21-35876994 - 7

Fax : +92-21-35876991 & 35876993

The Registrar
National Electric Power Regulatory Authority ("NEPRA")
NEPRA Tower, Attaturk Avenue (East)
Sector G-5/I, Islamabad

Date: 09th December, 2020

Ref.: WEL/NEPRA/003/21

Dear Sir,

Subject: Western Energy (Private) Limited ("Company") - Licensee Proposed Modification of the Generation License

The Company was granted Generation License No. WPGL/37/2017 on 5th January 2017 (the "Generation License") by NEPRA, under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997, for its wind power generation facility at Jhimpir, Taluka & District Thatta, Sindh (the "Project").

As mentioned in the Generation License, the Project was being designed with a capacity of 50 MW based on 25 Wind Turbine Generators ("WTG") of Haizhuang Windpower H111-2.0 with a hub height of 80m. the selected WTG was not able to achieve the capacity factor of 38% as determined by the Authority, and due to CSIC withdrawal from the Project, the Company selected GE 2.5-132 (Type certified by TUV NORD, GmbH) as the WTG for the Project with a hub height of 94m. Furthermore, the expected life after COD of the Project needs a revision from 20 years to 25 years to align it with tariff determination.

The Company, pursuant to Regulation 10(2) of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 ("Regulations") hereby seeks to apply for a modification of the Generation License granted to the Company to cater for the change of WTG to GE 2.5 -132, hub height and Project life.

In relation hereto, we certify that the documents-in-support attached with this modification application are prepared and submitted in conformity with the provisions of Regulation 10(2) of the Regulations, and we undertake to abide by the terms and provisions of the above-said Regulations. We further undertake and confirm that the information provided in the attached documents-in-support is true and correct to the best of our knowledge and belief.

A bank draft dated 3rd December, 2020 in the sum of PKR 396,765/- (Pakistan Rupees Three Hundred Ninety-Six Thousand Seven Hundred Sixty-Five) drawn in favor of NEPRA, being the applicable application fee calculated in accordance with Schedule II to the Regulations is also attached herewith.



In light of the submissions set out in this application and the information attached to the same, NEPRA is kindly requested to process the Licensee Proposed Modification of the Company's Generation License at the earliest, thereby enabling the Company to proceed further with the development of the Project.

Yours Sincerely,
For & On Behalf of
Western Energy (Private) Limited

A handwritten signature in dark ink, appearing to read "Tabish Tapal". The signature is written in a cursive style with some loops and flourishes.

Tabish Tapal
Chief Executive Officer

BOARD RESOLUTION



WESTERN ENERGY (PRIVATE) LIMITED

Registered Office: F-25 • Block 5 • Rojhan Street

Kehkashan • Clifton • Karachi - 75600 • Pakistan

Tel : +92-21-35876994 - 7


Fax : +92-21-35876991 & 35876993

CERTIFIED TRUE COPY OF RESOLUTION OF
THE BOARD OF DIRECTORS OF
WESTERN ENERGY (PRIVATE) LIMITED
PASSED ON AUGUST 26, 2020

"RESOLVED THAT Western Energy (Private) Limited ("**Company**") be and is hereby authorized to file a Licensee Proposed Modification of Generation License Application for submission to the National Electric Power Regulatory Authority for modification of the Company's Generation License 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."

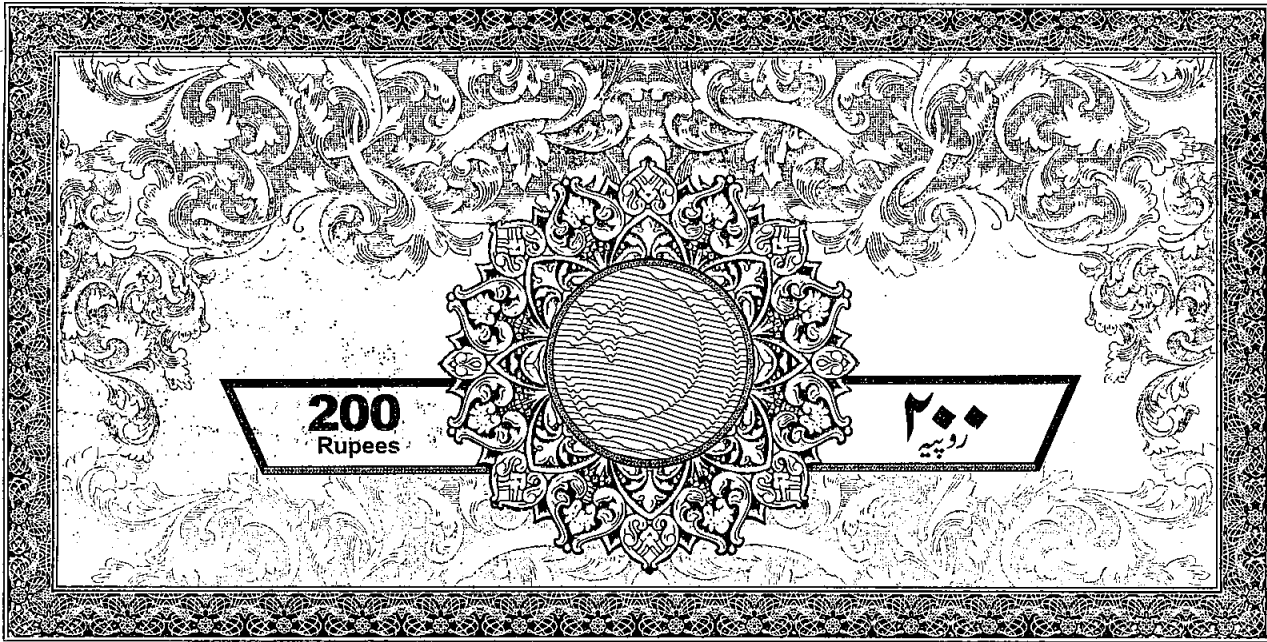
"FURTHER RESOLVED THAT in respect of the Licensee Proposed Modification of Generation License of the Company, **Mr. Tabish Tapal**, being Chief Executive Officer of the Company and **Mr. Muhammad Sadiq Tapal**, being Director of the Company, be and are hereby singly authorized and empowered for and on behalf of the Company to:

- (i) Review, execute, submit, and deliver the Licensee Proposed Modification of Generation License and any related documentation required by National Electric Power Regulatory Authority for the award of Modified Generation License 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 National Electric Power Regulatory 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 and execute the necessary documentation, pay the necessary fees, appear before the National Electric Power Regulatory Authority, as needed, and do all acts necessary for completion and processing of the award of Modified Generation License of the Company from the National Electric Power Regulatory Authority;
- (iv) Appoint or nominate any one or more officers of the Company or any other person or persons, singly or jointly, in their discretion to communicate with, make presentations to and attend any hearings in connection with the Licensee Proposed Modification of the Company's Generation License;
- (v) Do all such acts, matters and things as may be necessary for carrying out the purposes aforesaid and give full effect to the above resolutions."


Tabish Tapal
Chief Executive

AFFIDAVIT

Licensee Proposed Modification Application
Western Energy (Private) Limited



SHIF RAZA STAMP VENDOR
ence No. 02 G-14, Spanish Homes
Phase I, D.H.A. Karachi.

24 NOV 2020

(RUPEES TWO HUNDRED ONLY)

Signature:
Date:
To With Address:
Sign With Address:
USE FOR FREE WILL & DIVORCE PURPOSE

BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

50MW WIND POWER PROJECT AT JHIMPIR, PROVINCE OF SINDH, PAKISTAN

AFFIDAVIT

I, Tabish Tapal holding CNIC No. 42301-2385059-9, the Chief Executive Officer of Western Energy (Private) Limited, hereby solemnly affirm and declare on oath that the contents of the accompanying application for a Licensee Proposed Modification of the Generation License of Western Energy (Private) Limited, including all attached documents-in-support, are true and correct to the best of my knowledge and belief and that nothing has been concealed.

DEPONENT

Signature: _____

Name: Tabish Tapal

Dated: 4th December, 2020

LICENSEE PROPOSED MODIFICATION

Licensee Proposed Modification Application
Western Energy (Private) Limited

1. TEXT OF THE PROPOSED MODIFICATION

Western Energy (Private) Limited ("**Company**") was granted Generation License No. WPGL/37/2017 on 5th January 2017 (the "**Generation License**") by NEPRA with 20 years of expected life from Commercial Operation date (COD).

Haizhuang Windpower H111-2.0 MW was selected by the Company as Wind Turbine Generators ("**WTG**") for its proposed 50 MW wind power project to be located in Jhimpir, Thatta, Sindh, Pakistan ("**Project**").

The Company desires to modify its Generation License with respect to following;

1. **Change in WTG:** WTG stated in Generation License from Haizhuang Windpower H111-2.0 MW to General Electric GE 2.5 -132.
2. **Change in Hub Height:** Hub height stated in Generation License from 80m to 94m.
3. **Increase in Project life:** The expected life and term of the Generation License of the Project from 20 years to 25 years commencing from COD.

In relation hereto, please find the proposed modifications to Schedule 1 and Schedule 2 of the Generation License attached herewith as *Annexure 1* and *Annexure 2* respectively.

2. STATEMENT OF REASONS IN SUPPORT OF MODIFICATIONS

1. Change in WTG:

The Company applied for Generation License in 8th June 2016 with CSIC (Chongqing) Haizhuang Windpower Equipment Co. Ltd. H111-2.0 MW as WTGs to be installed at Project at a hub height of 80m. NEPRA announced tariff determination on 20th August 2018 and initially allowed 06 months to achieve financial close and capacity factor of 38%.

The Chinese Partner CSIC was also the WTG supplier and as per the yield assessment, the H111-2.0 was not able to achieve capacity of 38% allowed by NEPRA. Hence, the Chinese partner (CSIC) decided to withdrawal from the Project as equity investors, WTG supplier and EPC contractor. Thereafter, the Company undertook new wind resource assessment study based on which General Electric GE 2.5 -132 was determined as most suitable WTGs for its Project site.

Further to the above, the proposed modification in the Generation License is in line the new tariff petition filed by the Company.

2. Change in Hub Height

The selected WTG, GE 2.5 – 132, has hub height of 94m. The change of WTG in Generation License also requires change the hub height of WTGs from 80m to 94m.

3. Increase in Project life

The earlier tariff determined by the Authority on 20th August 2018 and other wind power project determinations, the Authority has determined project life and tariff period of 25 years. However, in the Generation License is based on the expected project operating life of 20 years. The increased operation life results in reduction of levelized cost of energy.

3. STATEMENT OF IMPACT ON THE TARIFF, QUALITY OF SERVICE AND THE PERFORMANCE BY THE LICENSEE OF ITS OBLIGATION UNDER THE GENERATION LICENSE

Impact on Tariff

- a. The proposed change in Generation License relating to increase in project life from 20 years to 25 years will result in a lower levelized tariff of the Project.
- b. Change of WTGs from H111-2.0 to GE 2.5 – 132 will ensure achievement of a higher capacity factor which will result in a lower cost of energy.

Impact on Services and Performance

General Electric is among the world's leading suppliers of power generation technologies including coal, oil, nuclear energy, natural gas and renewable sources such as water, wind, solar, geothermal and alternative fuels. Building on a strong power generation heritage and spanning more than a century, General Electric wind turbines have delivered proven performance, availability and reliability.

General Electric has strong presence in Pakistan with 450 MW (approx. 270 units) in operations and 50 MW under construction.

Therefore, modification in Generation License shall not have any adverse impact on the tariff, quality of service and performance of the Project.

In view of the foregoing, the Company hereby requests NEPRA to approve the proposed modification to the Generation License as such modification would allow the Company to proceed further with the Project and achieve financial close in a timely manner.

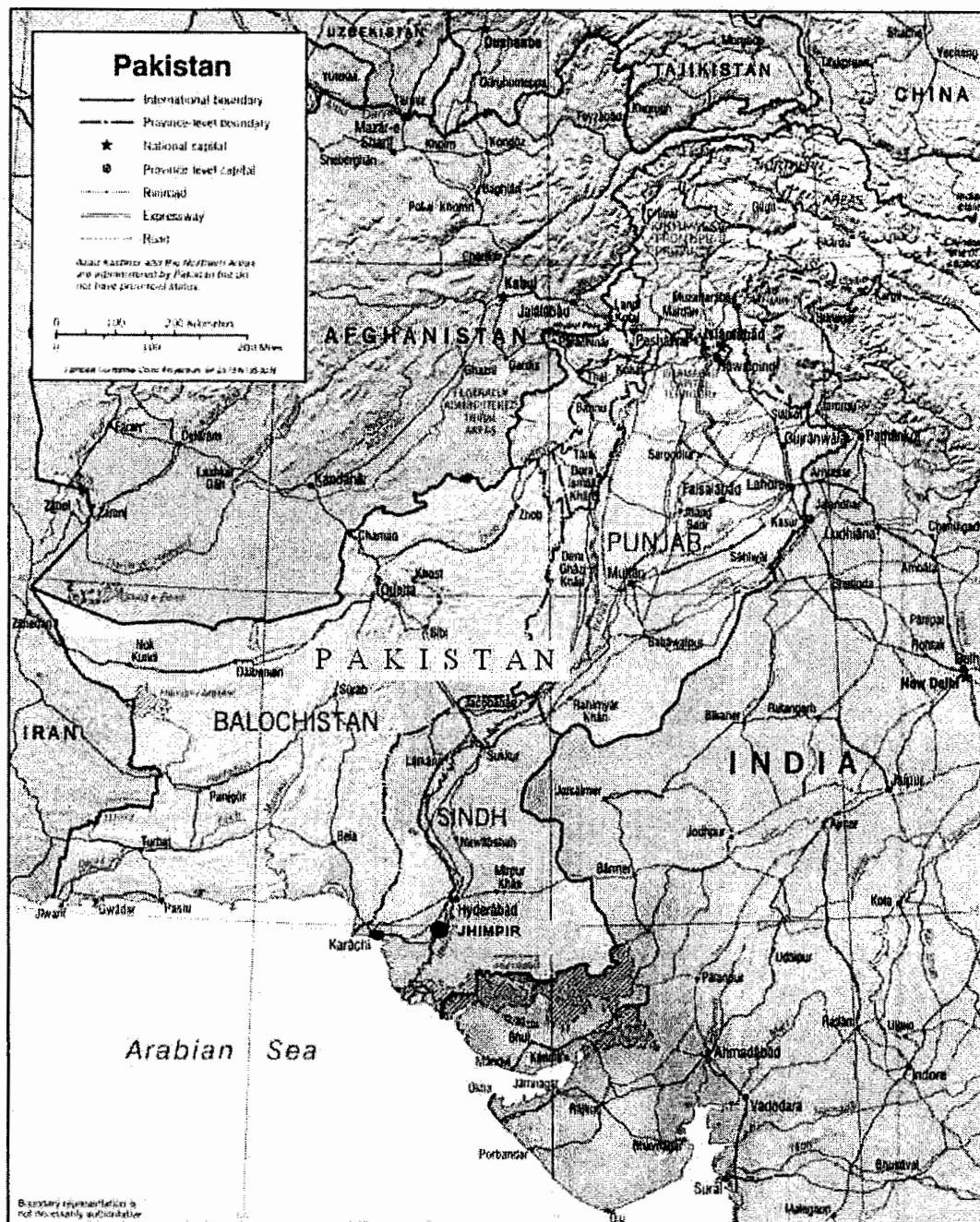
ANNEXURE 1 – REVISED SCHEDULE 1 TO THE GENERATION LICENSE

SCHEDULE-I

The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule.

Location of Generation Facility/ Wind Farm

The wind farm Project is located in Jhampir, which is located approximately 109 km from Karachi, Pakistan's commercial hub and main coastal/port city. The Project site consists of 428 acres of land, which has been acquired by the project company. The Karachi-Hyderabad Motorway (Super Highway) and National Highway are the connecting roads to the Project site. The Jhampir wind corridor is identified as potential area for the development of wind power projects. The geographical location of the project is shown in figure below.



Project Size

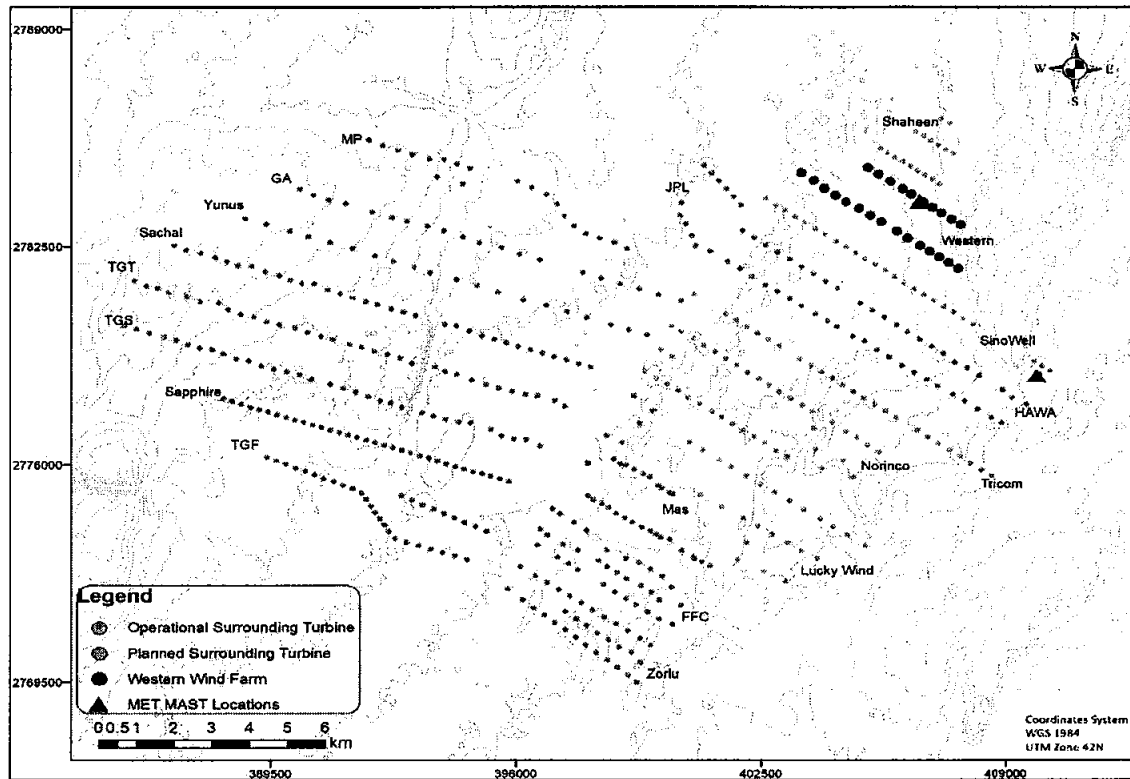
The Project Site has flat terrain with sparse vegetation, consisting of small shrubby bushes. The map is given in Figure below: WEPL Project site is shown in Red.



The Project shall have an installed capacity of approx. 50 MW rated power. The number of WTGs are 20 with capacity of 2.5 MW each.

Layout of Generation Facility/ Wind Farm

The general layout along with neighboring Wind Farms of 50 MW WEPL is shown in figure below. WEPL turbine are shown in Red color.



Land Coordinates of Generation Facility/Wind Farm

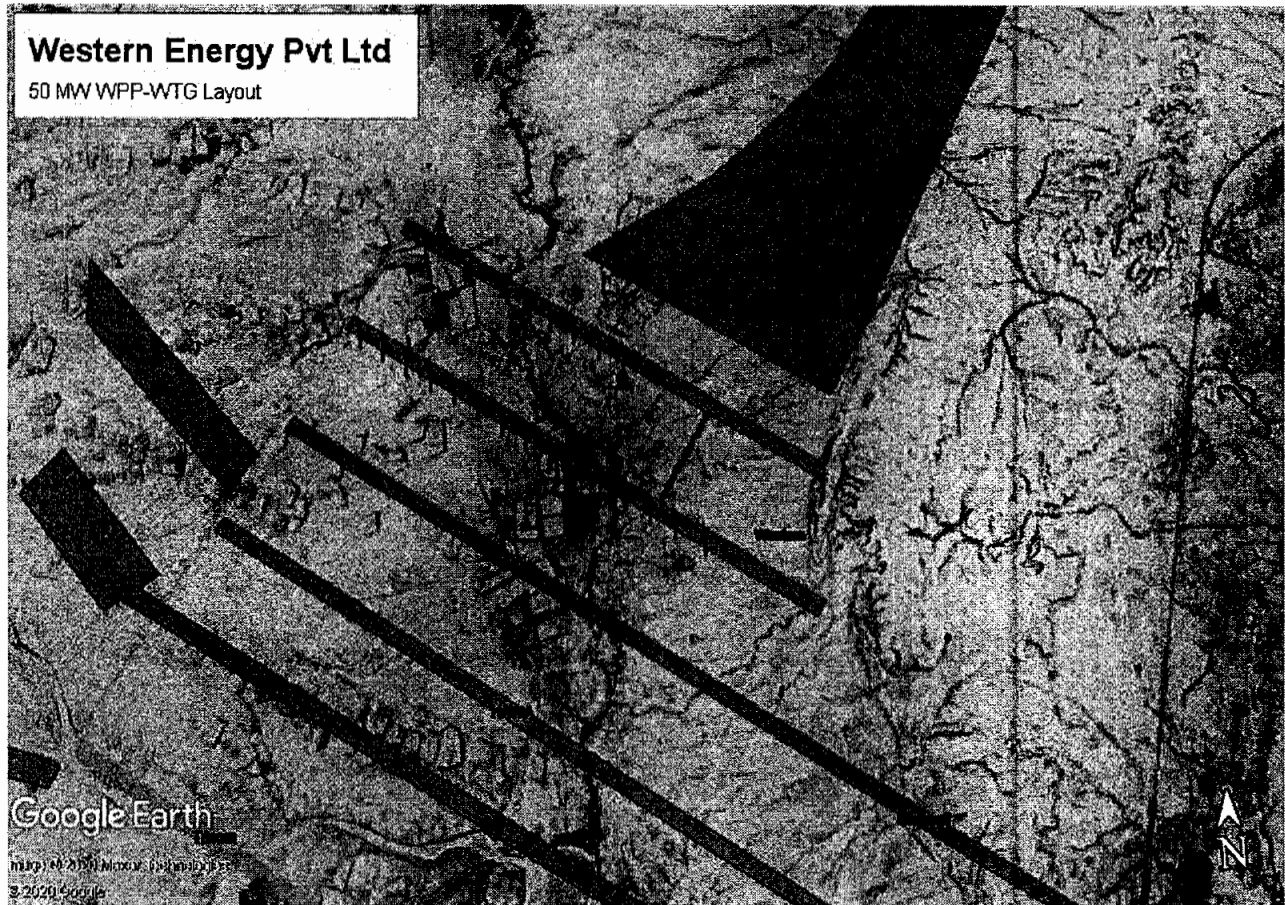
Location: Jhampir – Sindh, Pakistan

The Site coordinates are given in Table below.

| Total Land Area: 428 Acres | | |
|----------------------------|----------------|----------------|
| Geodetic Coordinates | | |
| Point No. | Latitude (N) | Longitude (E) |
| Boundary 1 | 25° 11' 12.32" | 68° 02' 44.02" |
| Boundary 2 | 25° 11' 7.61" | 68° 02' 40.98" |
| Boundary 3 | 25° 10' 0.35" | 68° 04' 29.78" |
| Boundary 4 | 25° 09' 59.66" | 68° 04' 30.91" |
| Boundary 5 | 25° 09' 42.21" | 68° 05' 8.50" |
| Boundary 6 | 25° 09' 38.41" | 68° 05' 5.14" |
| Boundary 7 | 25° 09' 0.13" | 68° 05' 4.99" |
| Boundary 8 | 25° 08' 55.40" | 68° 05' 1.84" |
| Boundary 9 | 25° 09' 33.30" | 68° 04' 11.44" |
| Boundary 10 | 25° 09' 33.99" | 68° 04' 10.28" |
| Boundary 11 | 25° 10' 39.92" | 68° 02' 23.60" |
| Boundary 12 | 25° 10' 35.90" | 68° 02' 20.53" |

Micro-Sitting of Generation Facility/Wind Farm

The micrositing of Wind Farm with 20 WTGs is given in figure below.

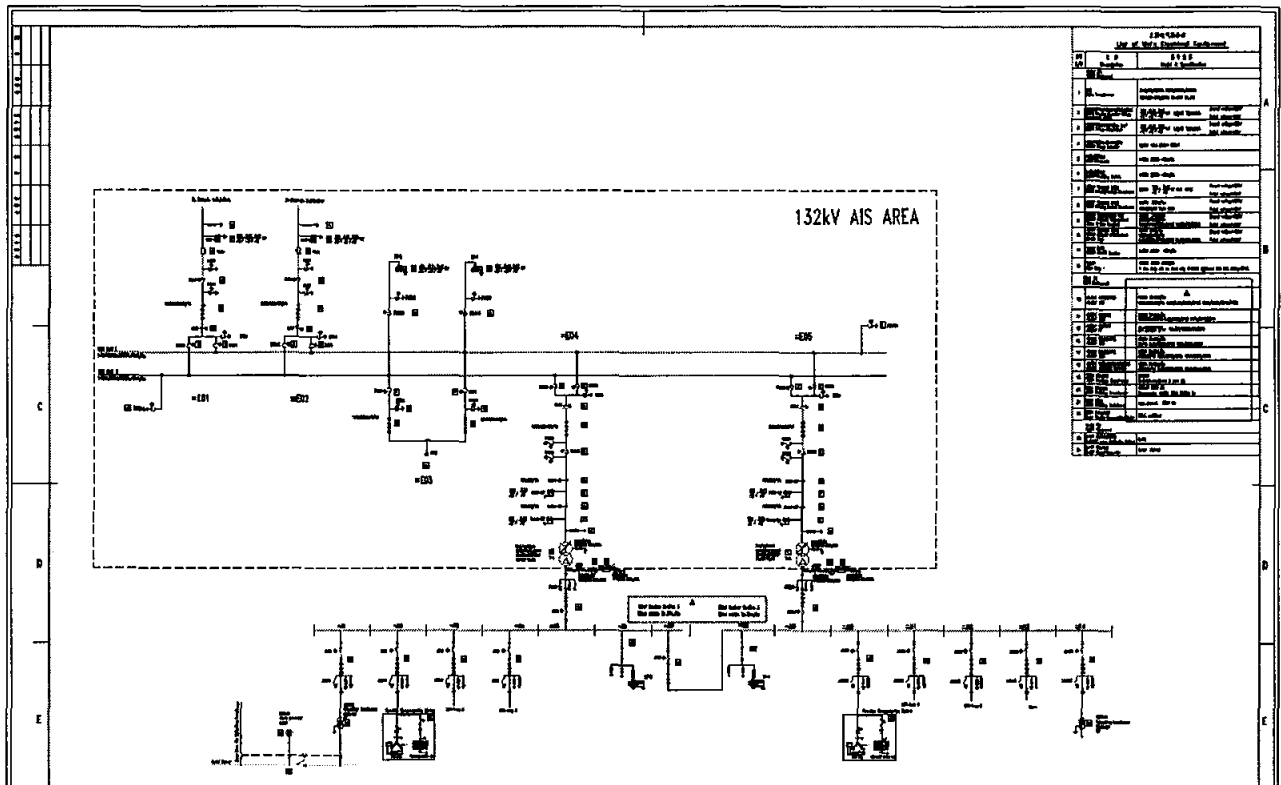


The coordinates are WTGs are given in table below.

| Wind Turbine | Easting [m] | Northing [m] | Z [m] | Hh [m] |
|--------------|-------------|--------------|-------|--------|
| GE_01 | 403306.0 | 2784765.0 | 48.0 | 94 |
| GE_02 | 403538.0 | 2784604.0 | 49.1 | 94 |
| GE_03 | 403770.0 | 2784435.0 | 50.4 | 94 |
| GE_04 | 404013.0 | 2784279.0 | 50.0 | 94 |
| GE_05 | 404249.0 | 2784113.0 | 50.0 | 94 |
| GE_06 | 404484.0 | 2783950.0 | 48.1 | 94 |
| GE_07 | 404717.0 | 2783784.0 | 46.6 | 94 |
| GE_08 | 404950.0 | 2783620.0 | 46.0 | 94 |
| GE_09 | 405191.0 | 2783461.0 | 46.0 | 94 |
| GE_10 | 405428.0 | 2783296.0 | 46.0 | 94 |
| GE_11 | 405661.0 | 2783132.0 | 46.0 | 94 |
| GE_12 | 405898.0 | 2782978.0 | 46.0 | 94 |
| GE_13 | 406133.0 | 2782811.0 | 48.2 | 94 |
| GE_14 | 406365.0 | 2782649.0 | 50.0 | 94 |
| GE_15 | 406645.0 | 2782488.0 | 51.4 | 94 |
| GE_16 | 405011.0 | 2784961.0 | 48.0 | 94 |
| GE_17 | 405253.0 | 2784796.0 | 48.0 | 94 |
| GE_18 | 405488.0 | 2784628.0 | 48.7 | 94 |
| GE_19 | 405733.0 | 2784466.0 | 50.0 | 94 |
| GE_20 | 405977.0 | 2784293.0 | 50.8 | 94 |

Electrical System Single Line Diagram of Generation Facility/Wind Farm

The project will install 20 WTGs (General Electric 2.5-132). There shall be four (04) WTG collector group.



Interconnection Arrangement/Transmission Facilities for Dispersal of Power from Generation Facility/Wind Power Plant

The electric power generated from the Generation Facility/Wind Power Plant of WEL shall be dispersed to the National Grid through the load center of HESCO.

(2). The proposed Interconnection Arrangement/Transmission Facilities for dispersal of power from Generation Facility/ Wind Power Plant of WEPL will consist of the following:-

- (a). A 3 KM 132-KV double circuit transmission line looping in-out with the sub-cluster connecting the Master Wind Energy (Private) Limited and Shaheen Wind Energy (Private) Limited to Jhampir-1 220/132KV collector substation.
- (b). Addition of 4th 220/132 kV transformer at the under construction Jhampir-1 220/132 kV substation.

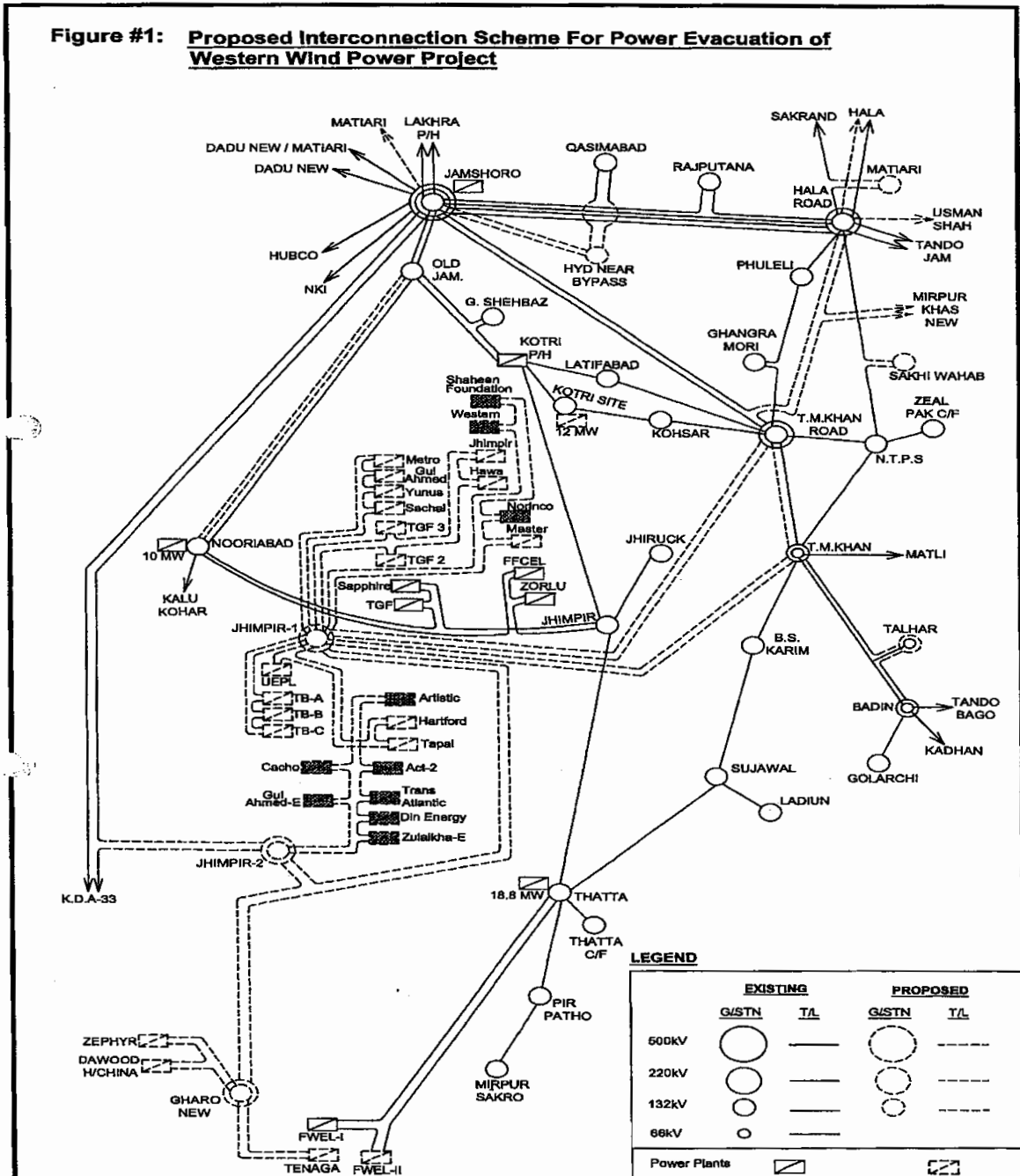
(3). The scheme of interconnection of Wind Power Plant of WEPL also proposes the following reinforcement already in place in Jhampir cluster:-

- (a). 220 kV D/C transmission line, approximately 18 km long, on twin-bundled Greeley conductor for looping In/Out of one circuit of the existing Jamshoro-KDA-33 D/C transmission line at Jhampir-2;
- (b). 220 kV D/C transmission line, approximately 7 km long, on twin-bundled Greeley conductor for looping In/Out of one of the planned Jhampir-1 – Gharo New D/C transmission line at Jhampir-2.

(4). Any change in the above mentioned Interconnection Arrangement/Transmission Facilities duly agreed by WEPL, NTDC and HESCO, shall be communicated to the Authority in due course of time.

Schematic Diagram of Interconnection Arrangement/Transmission Facilities for Dispersal of Power from Generation Facility/Wind Power Plant

Figure #1: Proposed Interconnection Scheme For Power Evacuation of Western Wind Power Project



Detail of Generation Facility/Power Plant/ Wind Farm

(A). General Information

| | | |
|--------|-----------------------------|--|
| (i). | Name of Applicant/Company | Western Energy Private Limited |
| (ii). | Registered/Business Office | F -25, Block-5, Rojhan Street, Kehkashan, Clifton, Karachi, Pakistan |
| (iii). | Plant Location | Jhampir, Nooriabad, District Thatta, Sindh |
| (iv). | Type of Generation Facility | Wind Power |

(B). Wind Farm Capacity & Configuration

| | | |
|--------|---|-----------------------------|
| (i). | Wind Turbine Type, Make & Model | General Electric GE 2.5-132 |
| (ii). | Installed Capacity of Wind Farm (MW) | 50 MW |
| (iii). | Number of Wind Turbine Units/Size of each Unit (kW) | 20 x 2500 kW |

(C). Wind Turbine Details

| | | |
|--------------------------|---------------------|---|
| (a). <u>Rotor</u> | | |
| (i). | Number of blades | 3 |
| (ii). | Rotor diameter | 132 m |
| (iii). | Swept area | 13,684 m ² |
| (iv). | Power regulation | Combination of blade pitch angle adjustment, and generator / converter torque control. |
| (v). | Cut-in wind speed | 3 m/s |
| (vi). | Cut-out wind speed | 20 m/s |
| (vii). | Survival wind speed | 49 m/s |
| (viii). | Pitch regulation | Independent electromechanical pitch system for each blade, rotary drives, 3-stage planetary gearbox |

| | | |
|-----------------------------------|----------------------|--|
| | | |
| (b). <u>Blades</u> | | |
| (i). | Blade length | 64.5 m |
| (ii). | Material | Fiber reinforced epoxy |
| (c). <u>Gearbox</u> | | |
| (i). | Type | Planetary Helical Gearbox |
| (ii). | Gear ratio | 1:147.54 |
| (iii). | Main shaft | Forged |
| (d). <u>Generator</u> | | |
| (i). | Nominal Power | 2530 (kW) |
| (ii). | Voltage | 690 V |
| (iii). | Type | Doubly fed induction generator |
| (iv). | Degree of Protection | IP54 Generator – IP23 Ring Body |
| (v). | Coupling | Friction Clutch |
| (vi). | Power factor | 0.95 |
| (e). <u>Yaw System</u> | | |
| (i). | Yaw bearing | Ball bearing slewing ring |
| (ii). | Brake | Active, yaw bearing slewing ring |
| (iii). | Yaw drive | 4 Stage Planetary Gearbox |
| (iv). | Speed | 0.5°/s Controlling speed |
| (f). <u>Control System</u> | | |
| (i). | Type | GE Mark VIe |
| (ii). | Scope of monitoring | Remote monitoring of different parameters, e.g. temperature sensors, pitch parameters, speed, generator torque, wind speed and direction, etc. |
| (iii). | Recording | Production data, event list, trip logs |

| | | |
|--------------------------|-------------------|--|
| (g). <u>Brake</u> | | |
| (i). | Design | Mechanical brakes |
| (ii). | Operational brake | Aerodynamic brake achieved by feathering blades. |
| (iii). | Secondary brake | Mechanical brake on (high speed) shaft of gearbox. |
| (h). <u>Tower</u> | | |
| (i). | Type | Tubular Steel Tower |
| (ii). | Hub heights | 94 m |

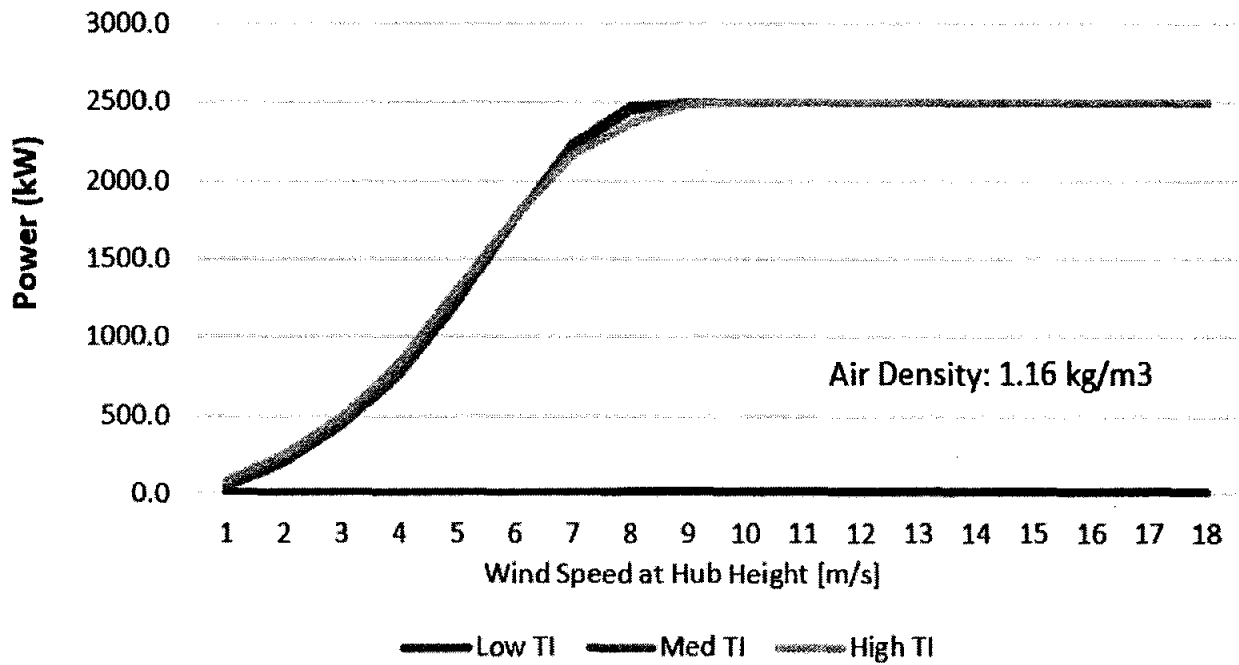
(D). Other Details

| | | |
|-------|---|-----------|
| (i). | Project Commissioning Date (Anticipated) | 2022-2023 |
| (ii). | Expected Life of the Project from Commercial Operation Date (COD) | 25 Years |

Power Curve
of Wind Turbine Generator (WTG) of
GE 2.5-132 MW
(Tabular)

| | Low TI | Med TI | High TI |
|--------------------------------|-------------------|-------------------|-------------------|
| Wind Speed at Hub Height [m/s] | Air Density | Air Density | Air Density |
| | $\rho = 1.16$ | $\rho = 1.16$ | $\rho = 1.16$ |
| | kg/m ³ | kg/m ³ | kg/m ³ |
| 3.0 | 41 | 52 | 80 |
| 4.0 | 201 | 214 | 248 |
| 5.0 | 433 | 449 | 493 |
| 6.0 | 763 | 785 | 842 |
| 7.0 | 1216 | 1241 | 1299 |
| 8.0 | 1762 | 1769 | 1778 |
| 9.0 | 2243 | 2218 | 2162 |
| 10.0 | 2479 | 2443 | 2369 |
| 11.0 | 2500 | 2500 | 2483 |
| 12.0 | 2500 | 2500 | 2500 |
| 13.0 | 2500 | 2500 | 2500 |
| 14.0 | 2500 | 2500 | 2500 |
| 15.0 | 2500 | 2500 | 2500 |
| 16.0 | 2500 | 2500 | 2500 |
| 17.0 | 2500 | 2500 | 2500 |
| 18.0 | 2500 | 2500 | 2500 |
| 19.0 | 2500 | 2500 | 2500 |
| 20.0 | 2500 | 2500 | 2500 |

Power Curve
of Wind Turbine Generator (WTG) of
GE 2.5-132 MW
(Graphical)



ANNEXURE 2 – REVISED SCHEDULE 2 TO THE GENERATION LICENSE

SCHEDULE-II

The Total Installed/Gross ISO Capacity (MW), Total Annual Full Load Hours, Average Wind Turbine Generator (WTG) Availability, Total Gross Generation of the Generation Facility/Wind Farm (in GWh), Array & Miscellaneous Losses (GWh), Availability Losses (GWh), Balance of Plant Losses (GWh) Annual Energy Generation (GWh) and Net Capacity Factor of the Generation Facility /Wind Farm of Licensee are given in this Schedule

SCHEDULE-II

| | | |
|------|---|-----------|
| (1). | Total Installed Gross ISO Capacity of the Generation Facility /Wind Farm (MW/GWh) | 50.00 MW |
| (2). | Total Annual Full Load Hours | 3,329 Hrs |
| (3). | Average Wind Turbine Generator (WTG) Availability | 97.0 % |
| (4). | Total Gross Generation of the Generation Facility/Wind Farm (in GWh) | 220.66 |
| (5). | Array & Miscellaneous Losses (GWh) | 42.08 |
| (6). | Availability Losses (GWh) | 6.62 |
| (7). | Balance of Plant Losses (GWh) | 5.52 |
| (8). | Annual Energy Generation (25 years equivalent Net AEP in GWh) | 166.44 |
| (9). | Net Capacity Factor | 38% |

| |
|-------------|
| Note |
|-------------|

All the above figures are indicative as provided by the Licensee. The net energy available to power purchaser for dispatch will be determined through procedures contained in the energy purchase agreement.

ANNEXURE 3 – TYPE TEST CERTIFICATE OF GE 2.5 – 132

Type Test Certificate



Type Certificate

Registration-No.

44 220 18221212-TC-IEC, Rev. 2

This certificate is issued to

GE India Industrial Private Limited

Division: Renewable Energy
John F. Welch Technology Centre
Plot #122, EPIP, Phase 2
Whitefield Road
Bangalore - 560 066
India

For the wind turbine

GE 2.5-132

GE64.5 / LM64.6P, HH 94 & 130 m, 50 Hz

WT Class

IEC S (STW / CWE)

This Certificate attests compliance with the below cited standards concerning the Design, Testing and Manufacturing. It is based on the following reference documents:

- 44 220 18546730-TDB-IEC, Rev.3 Design Basis Conformity Statement on the Wind Turbine GE 2.5-132 & GE2.7-132, TÜV NORD, dated 2019-07-31
- 44 220 18546730-D-IEC, Rev. 6 Design Evaluation Conformity Statement on the Wind Turbine GE 2.5-132, TÜV NORD, dated 2019-08-30
- 44 220 18546730-M-IEC, Rev. 7 Manufacturing Conformity Statement on the Wind Turbine GE 2.5-132, TÜV NORD, dated 2019-10-07
- 44 220 18221212-T-IEC, Rev. 1 Type Test Conformity Statement on the Wind Turbine GE 2.5-132, TÜV NORD, dated 2019-08-30
- 44 220 19177120-CC-IEC Rev.0 Component Certificate, Rotor Blade LM64.6P, TÜV NORD, dated 2019-08-26 valid until 2024-08-25
- 8116 221 212-20 E, Rev. 7 Final Evaluation Report, TÜV NORD, dated 2019-10-07

Normative references:

Certification scheme:

IEC 61400-22 "Wind turbines - Part 22: Conformity testing and certification", Edition 1.0, 2010-05

In combination with:

IEC 61400-1 "Wind Turbines - Part 1: Design requirements", Third Edition, 2005-08 and Amendment 1, 2010-10

The wind turbine type is specified on the annex of this Certificate.

Any change in the design, the production and erection or the manufacturer's quality system has to be approved by TÜV NORD CERT GmbH. Without approval this certificate loses its validity.



This Type Certificate is valid until: 30th May 2024
(under the condition of regular maintenance according to chapter 6.5.2 of IEC 61400-22)

TÜV NORD CERT GmbH
Certification Body
Wind Energy



Essen, 2019-10-07

Dr. F. Messer

Langemarckstraße 20 • 45141 Essen • email: windenergy@tuv-nord.de

ANNEXURE 4 – TARIFF DETERMINED BY NEPRA AND NEW TARIFF PETITION



National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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

No. NEPRA/TRF-417/WEPL-2017/2518-2520
February 12, 2019

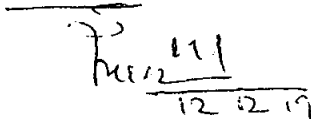
Subject: Decision of the National Electric Power Regulatory Authority in the matter of Review Motion filed by Western Energy (Pvt.) Limited against the Tariff Determination dated August 20, 2018 [Case # NEPRA/TRF-417/WEPL-2017]

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Annexure-I & II (24 pages) in the matter of Review Motion filed by Western Energy (Pvt.) Limited against the Tariff Determination dated August 20, 2018 in Case No. NEPRA/TRF-417/WEPL-2017.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.
3. The Order part along with Annexure-I & II of the Authority's Decision needs to be notified in the official Gazette.

Enclosure: As above


(Syed Safer Hussain)

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

CC:

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

**DECISION OF THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE MATTER OF
REVIEW MOTION FILED BY M/S WESTERN ENERGY (PVT.) LIMITED AGAINST THE TARIFF
DETERMINATION DATED AUGUST 20, 2018**

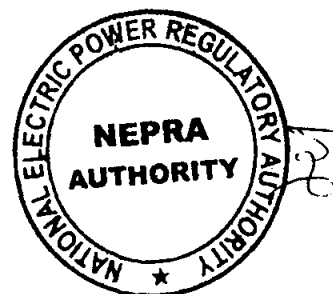
Background:

1. M/s Western Energy (Pvt.) Ltd. (hereinafter referred to as the "WEPL" or "the petitioner" or "the company") vide its letter dated August 31, 2018 filed a motion of leave for review ("review motion") under rule 16(6) of NEPRA Tariff (Standards and Procedure) Rules, 1998 read with NEPRA (Review Procedure) Regulations, 2009 against tariff determination ("impugned determination") issued by National Electric Power Regulatory Authority ("NEPRA" or "the Authority") dated August 20, 2018 in respect of WEPL's 50 MW wind power project ("the project") to be setup at Jhimpir, District Thatta, Sindh.

Proceedings:

2. The Authority admitted the review motion on September 13, 2018 for further proceedings. The Authority also decided to provide an opportunity of hearing to the petitioner. Notices of hearing were sent to the petitioner as well as relevant parties/stakeholders vide letters dated October 08, 2018. Hearing in this regard was held on October 17, 2018 which was attended by the petitioner. In the review motion, the petitioner has requested the Authority for review of the following parameters of the impugned determination:

- i) EFC Cost
- ii) O&M Cost
- iii) Project Development Cost
- iv) Insurance During Construction
- v) Financing Fee and Charges
- vi) Insurance During Operations
- vii) Return on Equity
- viii) Construction Period
- ix) Capacity Factor
- x) Financing/Debt Terms/ Interest During Construction
- xi) Time of Financial Close



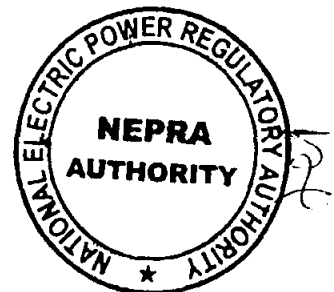
3. Following are the arguments/grounds as submitted by the petitioner in the review motion and during the course of hearing for the review of the above listed parameters.

i. **EPC Cost:**

The petitioner submitted that the Authority has approved the EPC cost of USD 57.251 million in the impugned determination against the EPC cost of USD 76 million as claimed by the petitioner. WEPL submitted that it executed Offshore Supply and Services Contract with Shanghai Marine Diesel Engine Research Institute ("SMDERI") on December 15, 2014 and Onshore Supply and Services Contract on January 30, 2015. The copies of the signed contracts have been provided to NEPRA and the company has also made down payments to the EPC contractor. The petitioner submitted that if it had received the approval of Upfront Tariff of 2015 (application returned by NEPRA for not getting power consent from CPPA-G) then it could have survived and have sustained the cost overruns. It submitted that the delay and change of circumstances of today's market are not on company's account. WEPL further submitted that NEPRA has not considered the fact that its project is on the list of China Pakistan Economic Corridor ("CPEC") projects and has conditional finances and support from China, therefore; entire arrangement is conditional to selection of EPC contractor which is supported for CPEC arrangements to avail the Sinasure backed financing. The petitioner also stated that it is unfair to ask WEPL to cancel or renegotiate signed contracts which were executed at the best terms prevailing in the market during 2014-15. It stated that such an action is impractical and will lead to legal consequences for the company. The petitioner also submitted that any reduction in project costs may render wind power projects unviable and would discourage investment in this important and clean energy sector. In the light of foregoing, the petitioner requested the Authority to review the approved EPC price.

ii. **O&M cost:**

The petitioner submitted that the Authority allowed O&M Costs of USD 1.15 million per annum i.e. USD 23,000 per MW per annum which is to be shared into local and foreign components in the ratio of 25:75 against the average O&M cost of USD 2.71 million per



annum i.e. around 54,000 per MW per annum as claimed by WEPL. The petitioner submitted that the claimed O&M cost is based on actual O&M agreement signed on January 30, 2015 which provides output guarantees. The petitioner submitted that extraordinary security arrangements are required for CPEC projects which increase the manning cost of this parameter. WEPL further submitted that for projects having 100% foreign financing, lenders require reviews, reporting and meetings in and outside of Pakistan which lead to engagement of consultants, higher traveling costs and other administrative costs. Furthermore, it submitted that there are certain security protocols of the Pakistan Air Force ("PAF") Base which require special lightings and safety markings to be maintained on the tower and turbine for the life of the project. The petitioner stated that NEPRA has relied on media reports and unrelated wind sites having different climatic conditions, operating environment and different risk profiles to approve the O&M cost in the impugned determination. It stated that those sources do not account for the realities on the ground which requires the wind risk and sovereign risk also to be priced by the O&M Company to provide availability and dispatch guarantees. In addition, the petitioner stated that NEPRA has directed that a process similar to EPC bidding guidelines be followed for selection of the O&M contractor which cannot happen especially when the timeline to achieve financial close of merely six months has been allowed. In view of the above submissions, the petitioner requested that the O&M cost as claimed in the tariff petition be allowed to ensure smooth, efficient, and effective operation of the project.

iii. **Project Development Cost**

The petitioner submitted that the Authority has allowed USD 2.5 million on account of Project Development Cost ("PDC") which will be adjusted at actual, up to the maximum allowed cost, based on production of verifiable documents at the time of Commercial Operations Date ("COD"). The petitioner submitted that the Non-EPC cost includes the items that are not part of the EPC contractor's scope of work while PDC include the costs incurred for the purpose of project development work, fees and expenses incurred or to be incurred for such purpose. These include, inter alia, costs of feasibility studies, grid interconnection studies, environmental studies, topographical survey of land, geotechnical investigation of land, fees of consultants, costs related to

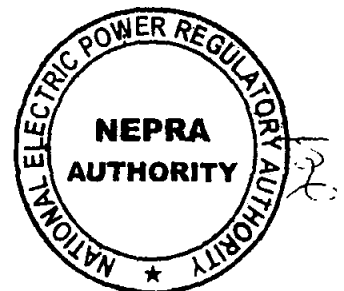


the purchaser letter of credit to be furnished to the power purchaser pursuant to the provisions of Energy Purchase Agreement ("EPA"), various regulatory fees to be paid to Alternative Energy Development Board ("AEDB"), NEPRA and other governmental agencies, costs incurred during the project company's formation and capital enhancement; and costs relating to various permits for the project, land cost, post financial close technical supervision and site security etc. The petitioner submitted that the long delays beyond WEPL's control have led to an abnormal increase in its development expenses involving extensive travelling, meetings with lenders and various other administrative expenses. It stated that significant time and resources have been spent on major development activities as those had to be done twice due to relocation of its site to address the concerns of the PAF Bholari Base thereby increasing its development time and cost for no fault of company. The petitioner further submitted that the reduction by NEPRA in the PDC cost is arbitrary and not on sound grounds as there is no comparison of costs associated to a solar project with wind project due to technical differences and difference in size of plant site, security issues etc. WEPL also submitted that the requirements imposed by the power purchaser in respect of factory acceptance tests have increased over the recent years, which has resulted in higher project development costs on travelling and on inspections during the project development period. In view thereof, the petitioner requested that USD 4.613 million as claimed in tariff petition may be allowed.

iv. **Insurance during construction**

The petitioner submitted that the Authority allowed insurance during construction at 0.50% of the approved EPC cost which works out to be around USD 0.286 million. The petitioner submitted that the insurance cost as claimed in the tariff petition was estimated based on feedback from insurance companies. It stated that the insurance cost is very volatile and moves on the international insurance markets and therefore to put thresholds thereon may lead to compromise on the quality of insurance that is required under the EPA. WEPL submitted that keeping in view the construction period of eighteen month, as assumed by the company, insurance during construction at 0.50% of EPC cost as determined by the Authority is at lower side. In view thereof, the petitioner requested to allow insurance during construction at 0.75% of claimed EPC

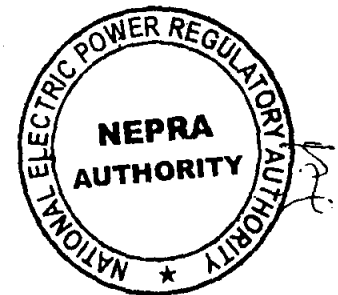
↓
H



cost including taxes and duties. Further, the petitioner requested that in case of any deviation, the actual pre-COD insurance cost capped at 1.35% of the EPC cost in line with earlier tariff determinations for other Independent Power Producers ("IPPs") may be allowed by the Authority.

v. **Financing Fee and Charges:**

The petitioner submitted that the Authority allowed financing fee and charges with the cap of 2.5% of the allowed debt portion of the approved capital cost which works out to be around USD 1.201 million against USD 2.779 million as claimed by WEPL. The petitioner submitted that the claimed financing fee and charges include the costs related to the arrangement of 100% foreign currency debt financing for the project. Such costs include, inter alia, the advisory and arrangement fee to secure Sinasure cover, the lenders' up-front and commitment fee, mandate and processing fee, fees payable and stamp duty applicable on the financing documents, agency fee, security trustee fee, lenders' project monitoring fee and the fees for the lenders' legal and other advisors customary for a foreign lender to engage in order to carry out the due diligence, drafting of financing documents and monitoring of the project during the construction period. WEPL submitted that these financial charges are in line with the prevailing market conditions and practices applicable for project financing transactions and as allowed by NEPRA in its other tariff determinations. The petitioner stated that financing cost for local and foreign financing is very different and it is unreasonable to compare the cost of financing arrangement for foreign loan with the local sourced rupee based loans. The petitioner also stated that the cap set by NEPRA is arbitrary and against the market norms especially considering the economic realities of Pakistan which is making arrangement of foreign financing more and more difficult for the projects. The petitioner submitted that the financing cost estimated by WEPL is based on signed term sheet and actual due diligence done by foreign lenders. In view of the above, WEPL requested that financing fee and charges amounting to USD 2.779 million may be allowed. Further, it requested that any duties and taxes, if applicable, on account of these costs may be allowed as adjustment at actual at the time of COD.

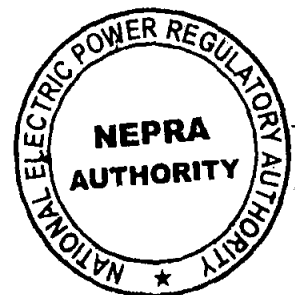


vi. **Insurance during Operation:**

The petitioner submitted that the Authority has allowed insurance during operation at 0.40% per annum of the approved EPC cost in the impugned determination against the WEPL's claimed cost of 0.50% per annum of the claimed EPC cost including duties and taxes. WEPL submitted that the claimed cost is based on market norms and actual quote obtained from leading insurance company of Pakistan. This cost covers the insurances required under the Implementation Agreement ("IA") and the EPA coupled with coverage customarily required for project financing transactions. The petitioner further submitted that the claimed amount is in line with actual insurance numbers allowed by NEPRA to other 50 MW wind power projects and with the benchmark tariff issued by NEPRA. The petitioner submitted that it is critical that all risks associated with the project are adequately addressed and all insurable events are catered for in a fool proof 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. In view of the above, the petitioner requested that insurance during operation at 0.5% per annum of the EPC cost, including taxes and duties, may be allowed. Further, it requested that any increase therefrom up to 1.35% of the EPC cost may be allowed upon submission of evidences.

vii. **Return on Equity:**

The petitioner submitted that the Authority has allowed Return on Equity ("ROE") at 14% against the WEPL's claimed ROE of 17%. The petitioner submitted that the risk profile should be considered with reference to the international agencies rating set for investment in Pakistan based on sovereign risk, economic stability, ratings for ease of doing business and payment security of the power purchasers. Considering these criteria, the overall rating for investment in Pakistan has deteriorated and needs to be revised upwards therefore it is beyond understanding that how ROE rate of 14% has been determined. The petitioner further submitted that the NEPRA Tariff Standards prescribed that the return on investment should be "commensurate with other investments of comparable risk". Based on this principle, it is observed that NEPRA earlier



considered 17% ROE to be fair rate in view of the return rates for other investments of comparable risk. The petitioner submitted that despite the fact that wind risk has been passed on to the power producer and term of the project has been increased to 25 years which has augmented the risk profile, however, WEPL claimed 17% ROE consistent with the earlier practice of NEPRA. The petitioner further submitted that given the standard lending norms, debt service reserve of six (6) months is a pre-requisite of all foreign financiers. This requirement is covered by sponsors out of their profit due to which they suffer significant reduction in their returns. Moreover, the petitioner stated that the wind power being a cleaner indigenous environmentally friendly technology that leads to reduction of CO2 emissions should be offered higher rate than the rate of return as other power projects like coal and LNG which are dependent on imported fuel source. In view of the above, the petitioner requested to allow the ROE at the rate of 17%.

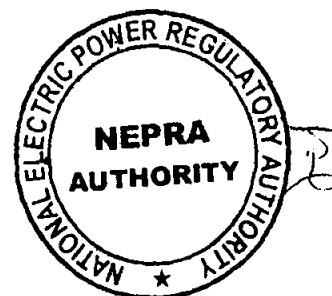
viii. **Construction Period**

The petitioner submitted that the Authority has allowed construction period of fifteen months against the claim of eighteen months. It submitted that the construction period of 18 months for the project is as per the signed EPC Agreement. The petitioner also submitted that the requirements imposed by the power purchaser in respect of factory acceptance tests have increased over the recent years which require approvals from the relevant entities resulting in longer construction periods. Stating above, the petitioner requested the Authority to allow construction period of eighteen months.

ix. **Capacity Factor:**

The petitioner submitted that the Authority has determined a 41.40% net annual plant capacity factor against the claimed 37%. WEPL submitted that it agrees with the Authority that the capacity factors have improved as new machines yield better energy output due to change in turbine design through improvement in hub height, nameplate capacity and especially the enhancement in rotor diameters. However, it submitted that there are certain impediments imposed on our site by PAF base which are also endorsed by AEDB through an MOU signed with the PAF Authorities. Due to

↓
[Signature]



those limitations, the selected technology was restricted to a hub height of 80 m and wind turbine size of 2 MW. Further, the revised micro siting of wind turbines lead to distance between two wind turbines to be less than 3 rotor diameter in some cases which increases the wake effect and reduces the energy yield. The petitioner submitted that the lenders rely on the P90 factor when evaluating the risk profile of a project which in WEPL case results in plant annual capacity factor of 29.63% which means that the entire wind risk is taken up by the sponsors of the project. The petitioner submitted that it is unclear how a capacity factor of 41.40% has been calculated, as none of the wind resource assessment studies support such an ambitious capacity factor. Such a move will certainly discourage potential investors from investing in wind power projects in Pakistan and works against the Government's commitment to address the energy crisis and promote renewable energy. In view of the foregoing, the petitioner requested to reconsider the net annual capacity factor of 41.40% and reduce the same to 37% and allow 100% tariff to the company on energy generated beyond 37%.

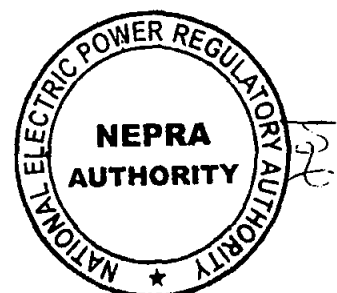
x. **Financing/ debt terms/Interest during construction:**

The petitioner submitted that the Authority has allowed interest during construction amounting to USD 1.939 million based on SBP rupee based refinancing terms, construction period of fifteen months, while considering notional drawdowns of 20% in each quarter. Further, the Authority has approved reference tariff on debt to equity proportion of 80:20 regardless of any form of financing secured by WEPL. The petitioner submitted that despite knowing that the project is being developed under CPEC where the criteria set in the bilateral arrangement of the two countries obligates China to arrange for loan for its own sourced products, NEPRA has assumed local sourced financing. The petitioner further submitted that the foreign currency financing arrangement is also supportive to the fact that Pakistan is desperately in need of foreign currency loans with longer repayment terms. The petitioner submitted that it has secured financing on softer terms with tenor of 13 years while the requirement to secure rupee loan is more expensive with shorter tenor of 10 years which will lead to higher tariff in initial years putting more burden on the power purchaser to arrange more payments during initial years. The petitioner further submitted that as the sponsors

and EPC Contractors are the guarantors of finances and the project is a CPEC project, the financing arranged from ICBC is at the most favored financing terms with margin as low as 4.2% (including arranger's fee) on 3 months LIBOR with an extended repayment term of 13 years. This rate is the lowest for any foreign currency loan even lower than the threshold set by NEPRA, i.e. LIBOR + 4.25% margin. The petitioner also submitted that it is against all norms that NEPRA on one hand is allowing six months to achieve financial close and on the other hand NEPRA wants us to abandon the arrangement made for foreign loan at a time when the country is in desperate need of foreign currency, disregard the term sheet signed with ICBC and start a fresh discussion with local lenders who are yet to start their due diligence and achieve financial close in the NEPRA stipulated time. In case SBP concessional financing is refused NEPRA assumes that the true up on the foreign loan will be given at the COD. The petitioner submitted that it is highly unlikely to get any loan disbursed based on such a conditional order unless the matching terms of loan are reflected in the NEPRA tariff determination. The petitioner further submitted that the arbitrary drawdown assumption is also not fair and the capital structure of the project should be set at 75:25 (Debt: Equity) which is also in accordance with the Schedule I of NEPRA (Benchmarks for Tariff Determination) Guidelines, 2018 dated June 19, 2018. Furthermore, the petitioner also submitted that it is a set practice of NEPRA that the treatment of Sinosure fee allowed to all CPEC projects is based on upfront payment. In view of the above, the petitioner requested the Authority to allow the foreign financing for the project as secured by WEPL and recalculate interest during construction based on foreign financing terms, 18 months construction period which is adjustable at COD based on actual LIBOR, timing and amount of loans drawdown during the project construction period after financial close. Further, it is also requested that Authority allows the costs and fees associated with Sinosure cover as part of the project costs or as pass-through item in the tariff.

xi. **Time to achieve Financial Close:**

The petitioner submitted that the Authority in the impugned determination has directed to achieve financial close within six months from the date of issuance of the said determination. The petitioner submitted that there are a number of requirements that



a project has to fulfil before financial close, which include negotiation and signing of EPA, IA especially considering that CPPA-G has to also ensure that the timeline given for grid interconnection can be met. The petitioner submitted that the company can endeavour to secure financial close in six months' timeline if it is guaranteed cooperation of CPPA-G and AEDB to get the EPA and IA signed well in time and provided our signed agreements and financing term sheets are accepted by NEPRA as it is impossible to renegotiate EPC, O&M and financing Agreements in a short span of six months. In view of the above submissions, the petitioner requested to allow one year time from the date of the tariff determination in order to achieve financial close.

Analysis and Decision of the Authority

4. The Authority noted that most of the grounds made with respect to parameters discussed above were already deliberated upon in the impugned determination. The Authority noted that it approved the EPC and O&M cost of the project on the basis of data from various sources (regional and international) while considering the differences in market conditions, performance targets, local manufacturing facilities, tariff regimes in different countries and other factors. Likewise, PDC, Insurance during construction and operation, financing fee & charges, construction period and rate of return were approved for the project on standard basis as allowed in other comparable projects. The Authority views that the risk of project delays should be borne by the project company and cannot be passed on to the consumers. Importantly, the Authority has noted that a number of wind power projects have submitted their acceptance on discussed above parameters showing the costs/basis approved by NEPRA are justified. Further, the Authority views that differential treatment cannot be adopted for any project being developed under CPEC or otherwise for tariff purposes. In view thereof, the Authority has decided to maintain its decision in respect of EPC Cost, O&M cost, PDC, Insurance during construction and operation, financing fee & charges, construction period and return on equity.
5. The Authority noted that it put the condition for O&M bidding in the tariff determinations of three wind power projects, including WEPL, issued on August 20, 2018. That condition was introduced to bring the best possible results for this particular component. A number of project companies including the petitioner have opposed that condition while stating that lenders

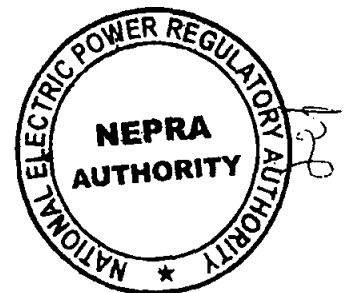
require getting O&M done through Original Equipment Manufacturer ("OEM") during the debt servicing period. Also, they submitted that the existing stage of wind industry in Pakistan is not at the level where independent operators can take on the O&M of wind power plants to the satisfaction of the financiers. The Authority deliberated in detail about the submissions with respect to level of wind industry in Pakistan. Further, the Authority analysed the approved benchmark level of O&M and found that the said cost is quite competitive and fairly similar to the cost being allowed in the comparable places. In view thereof, the requirement of bidding for O&M contractor was removed in the later twelve wind tariff determinations issued on November 19, 2018. Accordingly, the Authority has decided to take out this condition of bidding for O&M contractor introduced in the impugned determination. However, it is to be noted that the Authority may consider revising the approved O&M cost after the completion of debt servicing period. For that purpose, the Authority may require the project company to carry out competitive bidding while considering the approved cost as ceiling.

6. Further, the Authority also noted that O&M cost, in the ratio of 25:75 for local and foreign components, was allowed in the impugned determination. Subsequently, the Authority in view of the claims of a number of project companies as well as to put the major portion of local resources break the approved O&M cost in the ratio of 50:50 for local and foreign components. Accordingly, same proportion i.e. 50:50 for local and foreign O & M Cost is hereby allowed to the petitioner.
7. The Authority has noted that the capacity factor approved in the impugned determination was assessed by NEPRA using the standard tools. Afterwards, the Authority has issued tariff determination of another twelve wind power projects wherein the capacity factor was approved based on the results of Energy Reports as submitted by those project companies while maintaining certain thresholds. This premise was changed primarily in light of the submissions of the financiers such as Asian Development Bank and International Finance Corporation. Those financiers approached the Authority stating that it may not be viable for them to finance wind power projects on the basis as adopted by NEPRA to assess capacity factor. They requested the Authority that tariff of wind power projects should be set on a good probability level, preferably as given in their Energy Reports. They further submitted that the tariffs of wind power projects throughout the world are set on energy yield having higher possibility, mainly for financing purpose. Based on those submissions, the Authority approved

capacity factors of those projects based on their Energy Reports while maintaining certain limits. However, the sharing mechanism for bonus energy was tightened to ensure the effective tariff remains fairly same as a result of higher generation by these projects. In view thereof, the Authority has decided to review and approve the tariff of WEPL at net annual plant capacity factor of 38%. However, keeping in view the assessed potential of higher generation, the Authority has decided to approve the following sharing mechanism:

| <u>Net annual plant capacity factor</u> | <u>% of prevalent tariff allowed to power producer</u> |
|---|--|
| Above 38% up to 40% | 5% |
| Above 40% up to 42% | 10% |
| Above 42% up to 44% | 20% |
| Above 44% up to 46% | 40% |
| Above 46% up to 48% | 80% |
| Above 48% | 100% |

8. It is reiterated that differential treatment cannot be adopted for any project being developed under CPEC or otherwise for tariff purposes. The Authority considered that if any project is eligible to secure financing under SBP scheme then its tariff was determined on the terms of that financing. Similarly, the tariff of the project company was computed on the terms of concessionary financing being offered by SBP i.e. at a fixed rate of 6% for a debt servicing period of ten years. Alongside, the Authority approved the provision of adjustment of WEPL's reference tariff at the time of COD on conventional local/foreign financing, subject to the condition that the petitioner shall have to prove through documentary evidence, issued by SBP, that it exhausted the option of availing financing under SBP scheme before taking part/full of conventional local/foreign loan. In the later determinations of twelve wind power projects, the Authority approved their tariffs on SBP financing. However, the requirement for provision of documentary evidence of exhausting the option of availing financing under SBP scheme was modified, i.e. the Authority decided that the documentary evidence, issued either by SBP or commercial bank, can be submitted as a proof. In line with its recent decisions, the Authority has decided to allow WEPL that it can submit the documentary evidence issued by SBP or commercial bank as a proof that it exhausted the option of availing financing under SBP



scheme before going for full/part of conventional local/foreign financing. Further, the Authority noted that NEPRA (Benchmarks for Tariff Determination) Guidelines, 2018 provides local financing for wind power projects at KIBOR plus spread of 2.25%. Therefore, the Authority hereby modifies the provision of local financing for WEPL and allows the provision of local financing on the basis of KIBOR + spread of 2.25%. Regarding the argument of the petitioner with respect to debt drawdowns, the Authority has noted that the drawdowns taken for the reference tariff of WEPL are notional. The tariff of WEPL has been allowed adjustment of interest during construction at the time of COD on the basis of actual timings of the debt drawdowns for the allowed project construction period of fifteen months.

9. With regard to the petitioner's claim regarding the costs and fees associated with Sinasure, it is informed that the Authority has already allowed the provision of the said insurance on foreign loan. Sinasure has been allowed as a tariff component rather upfront amount in the total project cost keeping in view its favourable impact on tariff. Relevant section of the tariff determination of the project company provides that; "In case the company shall secure foreign loan under any credit insurance (Sinasure etc.) then the cost of that insurance shall be allowed to the maximum limit of 0.6% of the yearly outstanding principal and interest amounts. For that purpose, the spread over that full/part of loan shall be considered as 3.5% as the maximum limit."
10. The Authority noted that it approved a time period of six months to achieve financial close to WEPL in the impugned determination. In earlier cases, the Authority had been allowing financial close time of one year but that period was shortened in WEPL's tariff in view of rapid decline in prices of the wind technology. The Authority noted that in the recent twelve wind tariff determinations issued on November 19, 2018, the Authority extended financial close time to one year from the date of determination. This change was made as number of both solar and wind project companies submitted that several milestones need to be completed post award of tariff till financial close for which time of six months is not sufficient. In line with its recent decisions, the Authority hereby allows one year time to WEPL also to achieve financial close. That time of one year shall be reckoned from the date of impugned determination, i.e. August 20, 2018.



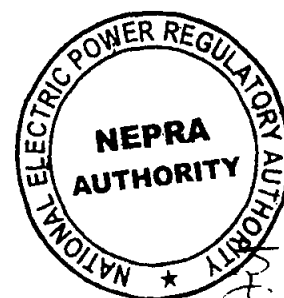


11. **ORDER**

In pursuance of section 7(3) (a) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with NEPRA (Tariff Standards & Procedure) Rules, 1998, the Authority hereby determines and approves the following generation tariff along with terms and conditions for Western Energy (Pvt.) Limited for its 50 MW wind power project for delivery of electricity to the power purchaser:

| Tariff Component | Rs./kWh | |
|---------------------------------|---------------|---------------|
| | Year 1-10 | Year 11-25 |
| Operations and Maintenance Cost | 0.8291 | 0.8291 |
| Insurance during Operation | 0.1651 | 0.1651 |
| Return on Equity | 1.3903 | 1.3903 |
| Debt Servicing | 4.8723 | - |
| Total | 7.2568 | 2.3846 |

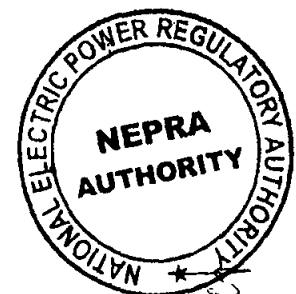
- Levelized tariff works out to be US Cents 4.7357/kWh.
- EPC cost of USD 57.251 million has been considered.
- PDC cost of USD 2.500 million has been taken into account.
- Insurance during construction at the rate of 0.5% of the EPC cost has been approved.
- Financing charges at the rate of 2.5% of the debt portion of the capital cost has been approved.
- Net Annual Plant Capacity Factor of 38% has been approved.
- O&M Cost of USD 23,000 per MW per year has been approved.
- Debt to Equity of 80:20 has been used.
- Debt Repayment period of 10 years has been taken into account.
- The cost of financing of 6% for construction and operation has been used.
- Return on Equity of 14% has been allowed.
- Construction period of fifteen (15) months has been used for the workings of ROEDC and IDC.



- Insurance during Operation has been calculated as 0.4% of the allowed EPC Cost.
- Reference Exchange Rates of 120 PKR/USD has been used.
- The aforementioned tariff is applicable for twenty five (25) years from COD
- Detailed component wise tariff is attached as **Annex-I** of this decision.
- Debt Servicing Schedule is attached as **Annex-II** of this decision.

A. One Time Adjustments at COD

- The EPC cost shall be adjusted at actual considering the approved amount as the maximum limit. Applicable foreign portion of the EPC cost will be adjusted at COD on account of variation in PKR/USD parity, on production of authentic documentary evidence to the satisfaction of the Authority. The adjustment in approved EPC cost shall be made only for the currency fluctuation against the reference parity values.
- The petitioner has submitted M/s CCS certification No. CCSC16TA0026R0 dated June 12, 2016 about the design, specification and country of origin of various component of the wind turbine to be installed for this project. At the time of COD stage tariff adjustments, the petitioner will have to provide a confirmation from the EPC contractor as to the fullest compliance of the equipment having same design and origin of manufacture as given in the type certificate. Where needed, the bill of lading and other support documents will also have to be submitted by the petitioner.
- PDC, Insurance during construction and Financing Fee and Charges shall be adjusted at actual at the time of COD considering the approved amount as the maximum limit. The amounts allowed on these accounts in USD will be converted in PKR using the reference PKR/USD rate of 120 to calculate the maximum limit of the amount to be allowed at COD.
- Duties and/or taxes, not being of refundable nature, relating to the construction period directly imposed on the company up to COD will be allowed at actual upon production of verifiable documentary evidence to the satisfaction of the Authority.



- IDC will be recomputed at COD on the basis of actual timing and amount of debt draw downs (for the overall debt allowed by the Authority at COD) for the project construction period of fifteen months allowed by the Authority.
- For full/part of conventional local or foreign loans or a mix of both, if availed by the company, the IDC shall also be allowed adjustment for change in applicable KIBOR/LIBOR.
- The tariff has been determined on debt: equity ratio of 80:20. The tariff shall be adjusted on actual debt: equity mix at the time of COD, subject to equity share of not more than 20%. For equity share of more than 20%, allowed IRR shall be neutralized for the additional cost of debt: equity ratio.
- The reference tariff has been worked out on the basis of cost of 6% offered under SBP financing scheme. In case cost negotiated by the company under SBP scheme is less than the said limit of 6%, the savings in that cost shall be shared between the power purchaser and the power producer in the ratio of 60:40 respectively.
- For full or part of local or foreign loan, if any, the savings in the approved spreads shall be shared between the power purchaser and power producer in the ratio of 60:40.
- ROEDC will be adjusted at COD on the basis of actual equity injections (within the overall equity allowed by the Authority at COD) for the project construction period of fifteen months allowed by the Authority.

B. Indexations

Adjustment of O&M, return on equity, return on equity during construction shall be made on quarterly basis for the quarters starting from 1st July, 1st October, 1st January and 1st April based on latest available information. Adjustment of Debt Servicing Component (if any) shall be made either quarterly or bi-annually depending upon the final terms approved by the Authority. For bi-annual adjustments, the periods shall start from 1st July and 1st January. Insurance component shall be adjusted on annual basis starting from either 1st January or 1st July. The indexation mechanisms are given hereunder:

↓
20



i) **Operation and Maintenance Costs**

O&M components of tariff shall be adjusted based on revised rates of local Inflation (CPI) as notified by Pakistan Bureau of Statistics, foreign inflation (US CPI) as notified by US Bureau of Labor Statistics and TT&OD selling rate of US Dollar as notified by National Bank of Pakistan according to the following formula;

| | | |
|-------------------------|---|--|
| F. O&M _(REV) | = | F. O&M _(REF) * US CPI _(REV) / US CPI _(REF) * ER _(REV) /ER _(REF) |
| L. O&M _(REV) | = | L. O&M _(REF) * CPI _(REV) / CPI _(REF) |
| Where; | | |
| F. O&M _(REV) | = | The revised O&M Foreign Component of Tariff |
| L. O&M _(REV) | = | The revised O&M Local Component of Tariff |
| F. O&M _(REF) | = | The reference O&M Foreign Component of Tariff |
| L. O&M _(REF) | = | The reference O&M Local Component of Tariff |
| US CPI _(REV) | = | The revised US CPI (All Urban Consumers) |
| US CPI _(REF) | = | The reference US CPI (All Urban Consumers) of 252.146 of August, 2018 |
| CPI _(REV) | = | The revised CPI (General) |
| CPI _(REF) | = | The reference CPI (General) of 229.27 for the month of August, 2018 |
| ER _(REV) | = | The revised TT & OD selling rate of US dollar |
| ER _(REF) | = | The reference TT & OD selling rate of RS. 120/USD |

Note: The reference indexes shall be revised after making the required adjustments in tariff components at the time of COD.

ii) **Insurance during Operation**

The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser, not exceeding 0.4% of the approved EPC cost, will be treated as pass through. Insurance component of reference tariff shall be adjusted annually as

per actual upon production of authentic documentary evidence according to the following formula:

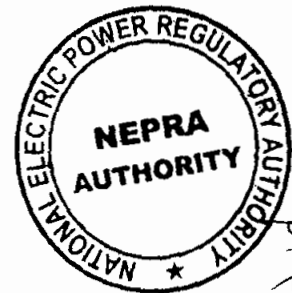
| | | |
|---------------|---|--|
| AIC | = | $Ins_{(Ref)} / P_{(Ref)} * P_{(Act)}$ |
| Where; | | |
| AIC | = | Adjusted insurance component of tariff |
| $Ins_{(Ref)}$ | = | Reference insurance component of tariff |
| $P_{(Ref)}$ | = | Reference premium @ 0.4% of approved EPC Cost at Rs. 120 |
| $P_{(Act)}$ | = | Actual premium or 0.4% of the approved EPC Cost converted into Pak Rupees on exchange rate prevailing at the time of insurance premium payment of the insurance coverage period whichever is lower |

iii) **Return on Equity**

The total ROE (ROE + ROEDC) component of the tariff will be adjusted on quarterly basis on account of change in USD/PKR parity. The variation relating to these components shall be worked out according to the following formula;

| | | |
|---------------|---|--|
| $ROE_{(Rev)}$ | = | $ROE_{(Ref)} * ER_{(Rev)} / ER_{(Ref)}$ |
| Where; | | |
| $ROE_{(Rev)}$ | = | Revised ROE Component of Tariff |
| $ROE_{(Ref)}$ | = | Reference ROE Component of Tariff |
| $ER_{(Rev)}$ | = | The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan |
| $ER_{(Ref)}$ | = | The reference TT & OD selling rate of Rs. 120/USD |

Note: The reference tariff component shall be revised after making the required adjustments at the time of COD.



Handwritten signature or mark.

iv) Indexations applicable to debt

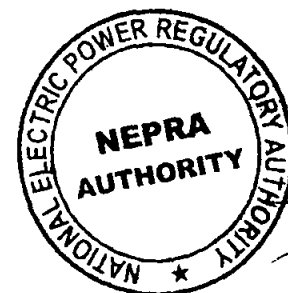
For full or part of conventional foreign debt, if any, respective principal and interest components will be adjusted on quarterly/bi-annual basis, on account of revised TT & OD selling rate of US Dollar, as notified by the National Bank of Pakistan as at the last day of the preceding quarter, over the applicable reference exchange rate. The interest part of the foreign loan shall be allowed adjustment with respect to change in the applicable LIBOR. For full or part of conventional local loan, if any, the interest component shall be allowed adjustment with respect to change in applicable KIBOR.

C. Terms and Conditions

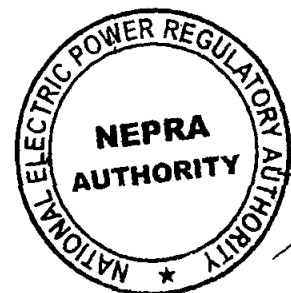
The following terms and conditions shall apply to the determined tariff:

- All plant and equipment shall be new and of acceptable standards. The verification of the plant and equipment will be done by the independent engineer at the time of the commissioning of the plant duly appointed by the power purchaser.
- The Authority may consider revising approved O&M cost after the completion of debt servicing period. For that purpose, the Authority may require the project company to carry out competitive bidding while considering the approved cost as ceiling.
- This tariff will be limited to the extent of net annual energy generation supplied to the power purchaser up to 38% net annual plant capacity factor. Net annual energy generation supplied to the power purchaser in a year, in excess of 38% net annual plant capacity factor will be charged at the following tariffs:

| <u>Net annual plant capacity factor</u> | <u>% of prevalent tariff allowed to power producer</u> |
|---|--|
| Above 38% up to 40% | 5% |
| Above 40% up to 42% | 10% |
| Above 42% up to 44% | 20% |
| Above 44% up to 46% | 40% |
| Above 46% up to 48% | 80% |
| Above 48% | 100% |



- The petitioner is required to ensure that all the equipment is installed as per the details/specifications provided in the determination. Any change in the power curve of the turbines as provided in studies along with the petition and the relevant assumptions contained therein shall not be allowed.
- The petitioner is required to maintain the availability levels as declared in the Tariff Petition and the studies provided therein. Necessary clauses shall be included in the EPA so that the power producer cannot intentionally suppress the capacity factors. NPCC shall conduct detailed monitoring/audit of the operational record/log of all the wind turbines on quarterly basis to verify output/capacity of the power plant.
- The risk of wind resource shall be borne by the power producer.
- In the tabulated above tariff no adjustment for certified emission reductions has been accounted for. However, upon actual realization of carbon credits, the same shall be distributed between the power purchaser and the power producer in accordance with the applicable GOP Policy, amended from time to time.
- The savings in the cost under SBP scheme during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40.
- In case the company shall secure full or part of local conventional loan then the tariff of company shall be adjusted at the time of COD at applicable KIBOR + spread of 2.25%. The savings in the approved spreads during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40. The tenor of the debt servicing shall not be less than thirteen years for this loan.
- In case the company shall secure full or part of foreign conventional loan then the tariff of company shall be adjusted at the time of COD at applicable LIBOR + spread of 4.25%. The savings in the approved spreads during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40. The tenor of the debt servicing shall not be less than thirteen years for this loan.



↓
26

- In case the company shall secure foreign loan under any credit insurance (Sinosure etc.) then the cost of that insurance shall be allowed to the maximum limit of 0.6% of the yearly outstanding principal and interest amounts. For that purpose, the spread over that full/part of loan shall be considered as 3.5% as the maximum limit. The savings in the spread during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40.
- The company will have to achieve financial close within one year from the date of issuance of original tariff determination dated August 20, 2018. The tariff granted to the company will no longer remain applicable/valid, if financial close is not achieved by the company in the abovementioned timeline or its generation license is declined/revoked by NEPRA.
- The targeted maximum construction period after financial close is fifteen months. No adjustment will be allowed in this tariff to account for financial impact of any delay in project construction. However, the failure of the company to complete construction within fifteen months will not invalidate the tariff granted to it.
- Pre COD sale of electricity is allowed to the project company, subject to the terms and conditions of Energy Purchase Agreement, at the applicable tariff excluding principal repayment of debt component and interest component. However, pre COD sale will not alter the required commercial operations date stipulated by the Energy Purchase Agreement in any manner.
- In case the company is obligated to pay any tax on its income from generation of electricity, or any duties and/or taxes, not being of refundable nature, are imposed on the company, the exact amount paid by the company on these accounts shall be reimbursed on production of original receipts. This payment shall be considered as a pass-through payment. However, withholding tax on dividend shall not be a pass through item.
- No provision for the payment of Workers Welfare Fund and Workers Profit Participation has been made in the tariff. In case, the company has to pay any such fund, that will be treated as pass through item in the EPA.




- The approved tariff along with terms & conditions shall be made part of the EPA. General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the EPA.
12. The Order part along with two Annexures is recommended for notification by the Federal Government in the official gazette in accordance with Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

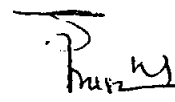
AUTHORITY

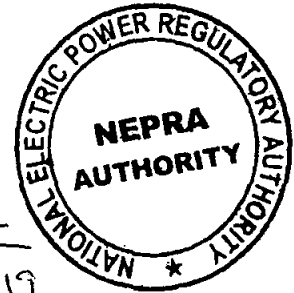

Saif Ullah Chattha)
Member

7.2.2019


(Rafique Ahmed Shaikh)
Member

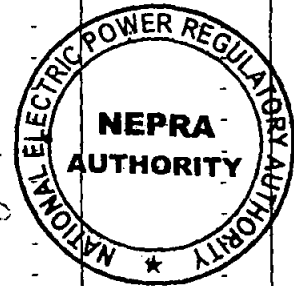

3/8/2/2019
(Rehmatullah Baloch)
Vice Chairman


12.02.19



**WESTERN ENERGY (PVT.) LIMITED
REFERENCE TARIFF TABLE**

| Year | Foreign O&M | Local O&M | Insurance | Return on Equity | ROEDC | Loan Repayment | Interest Charges | Tariff |
|-------------------------|---------------|---------------|---------------|------------------|---------------|----------------|------------------|---------------|
| | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh |
| 1 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 2.7469 | 2.1253 | 7.2568 |
| 2 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 2.9155 | 1.9568 | 7.2568 |
| 3 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 3.0944 | 1.7779 | 7.2568 |
| 4 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 3.2843 | 1.5880 | 7.2568 |
| 5 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 3.4858 | 1.3864 | 7.2568 |
| 6 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 3.6997 | 1.1725 | 7.2568 |
| 7 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 3.9268 | 0.9455 | 7.2568 |
| 8 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 4.1677 | 0.7046 | 7.2568 |
| 9 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 4.4235 | 0.4488 | 7.2568 |
| 10 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 4.6949 | 0.1774 | 7.2568 |
| 11 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 12 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 13 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 14 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 15 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 16 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 17 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 18 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 19 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 20 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 21 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 22 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 23 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 24 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| 25 | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | - | - | 2.3846 |
| Levelized Tariff | 0.4146 | 0.4146 | 0.1651 | 1.2754 | 0.1149 | 2.3546 | 0.9436 | 5.6828 |

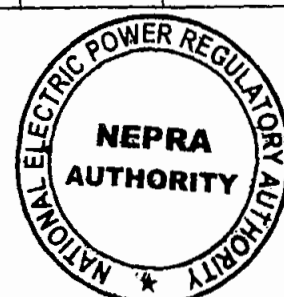


WESTERN ENERGY (PVT.) LIMITED
DEBT SERVICING SCHEDULE

| | | | | | | | |
|----|------------|-----------|---------|------------|-----------|--------|--------|
| 1 | 50,541,751 | 931,338 | 758,126 | 49,610,413 | 1,689,464 | 2.7469 | 2.1253 |
| 2 | 49,610,413 | 945,308 | 744,156 | 48,665,105 | 1,689,464 | | |
| 3 | 48,665,105 | 959,488 | 729,977 | 47,705,617 | 1,689,464 | | |
| 4 | 47,705,617 | 973,880 | 715,584 | 46,731,737 | 1,689,464 | | |
| 5 | 46,731,737 | 988,488 | 700,976 | 45,743,249 | 1,689,464 | 2.9155 | 1.9568 |
| 6 | 45,743,249 | 1,003,316 | 686,149 | 44,739,934 | 1,689,464 | | |
| 7 | 44,739,934 | 1,018,365 | 671,099 | 43,721,569 | 1,689,464 | | |
| 8 | 43,721,569 | 1,033,641 | 655,824 | 42,687,928 | 1,689,464 | | |
| 9 | 42,687,928 | 1,049,145 | 640,319 | 41,638,782 | 1,689,464 | 3.0944 | 1.7779 |
| 10 | 41,638,782 | 1,064,883 | 624,582 | 40,573,900 | 1,689,464 | | |
| 11 | 40,573,900 | 1,080,856 | 608,608 | 39,493,044 | 1,689,464 | | |
| 12 | 39,493,044 | 1,097,069 | 592,396 | 38,395,976 | 1,689,464 | | |
| 13 | 38,395,976 | 1,113,525 | 575,940 | 37,282,451 | 1,689,464 | 3.2843 | 1.5880 |
| 14 | 37,282,451 | 1,130,227 | 559,237 | 36,152,223 | 1,689,464 | | |
| 15 | 36,152,223 | 1,147,181 | 542,283 | 35,005,043 | 1,689,464 | | |
| 16 | 35,005,043 | 1,164,389 | 525,076 | 33,840,654 | 1,689,464 | | |
| 17 | 33,840,654 | 1,181,854 | 507,610 | 32,658,799 | 1,689,464 | 3.4858 | 1.3864 |
| 18 | 32,658,799 | 1,199,582 | 489,882 | 31,459,217 | 1,689,464 | | |
| 19 | 31,459,217 | 1,217,576 | 471,888 | 30,241,641 | 1,689,464 | | |
| 20 | 30,241,641 | 1,235,840 | 453,625 | 29,005,802 | 1,689,464 | | |
| 21 | 29,005,802 | 1,254,377 | 435,087 | 27,751,424 | 1,689,464 | 3.6997 | 1.1725 |
| 22 | 27,751,424 | 1,273,193 | 416,271 | 26,478,231 | 1,689,464 | | |
| 23 | 26,478,231 | 1,292,291 | 397,173 | 25,185,941 | 1,689,464 | | |
| 24 | 25,185,941 | 1,311,675 | 377,789 | 23,874,266 | 1,689,464 | | |
| 25 | 23,874,266 | 1,331,350 | 358,114 | 22,542,915 | 1,689,464 | 3.9268 | 0.9455 |
| 26 | 22,542,915 | 1,351,321 | 338,144 | 21,191,595 | 1,689,464 | | |
| 27 | 21,191,595 | 1,371,590 | 317,874 | 19,820,004 | 1,689,464 | | |
| 28 | 19,820,004 | 1,392,164 | 297,300 | 18,427,840 | 1,689,464 | | |
| 29 | 18,427,840 | 1,413,047 | 276,418 | 17,014,794 | 1,689,464 | 4.1677 | 0.7046 |
| 30 | 17,014,794 | 1,434,242 | 255,222 | 15,580,551 | 1,689,464 | | |
| 31 | 15,580,551 | 1,455,756 | 233,708 | 14,124,795 | 1,689,464 | | |
| 32 | 14,124,795 | 1,477,592 | 211,872 | 12,647,203 | 1,689,464 | | |
| 33 | 12,647,203 | 1,499,756 | 189,708 | 11,147,447 | 1,689,464 | 4.4235 | 0.4488 |
| 34 | 11,147,447 | 1,522,253 | 167,212 | 9,625,194 | 1,689,464 | | |
| 35 | 9,625,194 | 1,545,086 | 144,378 | 8,080,108 | 1,689,464 | | |
| 36 | 8,080,108 | 1,568,263 | 121,202 | 6,511,845 | 1,689,464 | | |
| 37 | 6,511,845 | 1,591,787 | 97,678 | 4,920,059 | 1,689,464 | 4.6949 | 0.1774 |
| 38 | 4,920,059 | 1,615,662 | 73,801 | 3,304,395 | 1,689,464 | | |
| 39 | 3,304,395 | 1,639,893 | 49,566 | 1,664,497 | 1,689,464 | | |
| 40 | 1,664,497 | 1,664,497 | 24,967 | (0) | 1,689,464 | | |

28

24





WESTERN ENERGY (PRIVATE) LIMITED

Registered Office: F-25 • Block 5 • Rojhan Street
Kehkashan • Clifton • Karachi - 75600 • Pakistan
Tel : +92-21-35876994 - 7
Fax : +92-21-35876991 & 35876993

The Registrar
National Electric Power Regulatory Authority
NEPRA Tower Attaturk Avenue (East),
Sector G-5/1, Islamabad.

Date: May 12, 2020
Ref# WEL/NEPRA/005/20

**Subject: Submission of Cost Plus Tariff Petition of Western Energy (Private) Limited for
50 MW Wind Power Projects**

Kindly accept the Company's Tariff Petition, along with the fee as determined by the National Electric Power Regulatory Authority ("NEPRA" or the "Authority") for kind consideration and favourable approval by the Authority in accordance, inter alia, with the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with Rule 3 of the NEPRA tariff Standards and Procedure Rules, 1998 and other applicable provisions of NEPRA law.

The Cost Plus Tariff Petition is submitted together with:

- a. The Bank Draft No. 01558103 dated May 11, 2020, amounting to PKR 741,792/- (Pakistan Rupees Seven Hundred Forty-One Thousand, seven Hundred and ninety-two only) as requisite for fee for Tariff Petition as communicated by NEPRA.
- b. Board Resolution of Western Energy (Private) Limited.
- c. Affidavit of Mr. Tabish Tapal
- d. Affidavit of Mr. Muhammad Sadiq Tapal.

We look forward to receive an early positive determination in order to achieve the completion of project within timelines in the national interest of Pakistan.

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


.....
TABISH TAPAL
(CHIEF EXECUTIVE OFFICER)



TARIFF PETITION

WESTERN ENERGY (PRIVATE) LIMITED 50 MW WIND POWER PROJECT

*Before
The National Electric Power Regulatory Authority (NEPRA)*

May 12, 2020

TABLE OF CONTENTS

| | |
|---|----|
| 1. Petitioner's Information | 1 |
| 2. Grounds for Petition | 2 |
| 3. Executive Summary | 5 |
| 4. The Project | 8 |
| 5. EPC – Process & Selection | 12 |
| 6. Project Cost | 16 |
| 7. Financing Arrangement | 20 |
| 8. Operations Cost | 21 |
| 9. Reference Tariff | 22 |
| 10. Indexations & Adjustments | 26 |
| 11. Pass Through Items & Tariff Assumptions | 30 |

1. Petitioner's Information

1.1 PETITIONER

Name: Western Energy (Private) Limited ("WEL", the "Project Company" or the "Petitioner").

Address: P-25, Block-5, Rojhan Street, Kehkashan, Clifton, Karachi, Pakistan.

Company Registration #: 0084483

1.2 PROJECT MAIN SPONSOR

Tapal Group

1.3 REPRESENTATIVE OF THE PETITIONER

Chief Executive Officer: Mr. Tabish Tapal

Director: Mr. Muhammad Sadiq Tapal

1.4 PROJECT ADVISORS

Financial Advisors: Bridge Factor (Pvt) Ltd.

Technical Advisors: Renewable Resources (Private) Limited

Legal Council: Axis Law Chambers

2. Grounds for Petition

2.1 BASIS FOR PETITION

This Petition is made to the National Electric Power Regulatory Authority ("NEPRA") under the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of) 1997 (the "NEPRA Act") and the Tariff Standards and Procedure Rules, 1998 (the "NEPRA Rules") made under the NEPRA Act; and other applicable laws.

Under the NEPRA Act, NEPRA is responsible for determining tariffs, rates and other terms and conditions for the supply of electric power services by the generation, transmission and distribution companies and recommending them to the Federal Government for notification and therefore, in light of such authority, the Petitioner is hereby submitting this Petition for NEPRA's consideration.

2.2 ABOUT THE PETITIONER - BRIEF

The Project Company was incorporated on 9th July 2013, to develop, own and operate an approximately 50 MW wind power project in Jhimpir, Thatta ("Project") pursuant to a Letter of Intent issued by the Alternative Energy Development Board ("AEDB") vide its letter No. B/3/16/2007-138 dated 6th March 2013 ("LOI") (Annexure 1).

Subsequent to the issuance of LOI, Project was allocated 852 acres of land by the Government of Sindh through the Sindh Board of Investment and Land Utilization Department. The soil investigation, topography survey and technical feasibility were carried out. Wind mast installed and site-specific wind data for over 18 months was collected and the approval for our wind resource analysis was received from AEDB vide letter no B/3/1/WEP/13 dated 23rd June 2015.

As the land allocated was close vicinity of the PAF Bholari Base, micro sighting of the wind turbines was effected due to a height restriction perimeters declared by PAF Bholari Base. As per the height restrictions set by the PAF, AEDB and Energy Department of Government of Sindh relocated the Project land measuring 428 acres, which required the Project company to carry out all the studies again on the new Project site.

Despite achieving all the required prerequisites for Power Acquisition Request ("PAR"), the Project Company was not awarded PAR within the tariff validity time of 2015 upfront tariff which expired in June 2016.

Company filed tariff petition before NEPRA for approval of reference generation tariff under cost plus mode on 27th November, 2017. The Authority announced Reference Tariff ("Tariff Determination") on 20th August 2018 and initially allowed 06 months to achieve financial close period from date of issuance of tariff determination. The Company filed motion for review on and requested to review some parameters of tariff.

The Tariff Determined was not "Bankable" and therefore no progress could be made on the project development during the pendency of the Review Motion. Decision on the motion for leave for review was made on 12th February 2019 and some of the key parameters i.e. capacity factor and interest rate were revised by the Authority. However, the time to achievement of financial close was extended to 12 months

commencing from the date of original decision. Effectively, the Authority has allowed only six (6) months (from 12th February 2019 to 20th August 2019) to Company for achieving financial close.

The Company filed clarification letter ("Review Clarification") to Authority dated 25th March 2019 ("Review letter") to highlight that the one (1) year time period for achieving financial close from the date of the original tariff determination (which was based on some assumption which were not bankable) was not justified. The aforementioned review letter was later converted into a review motion in which Company requested Authority to extend the financial closing date till 12 Feb 2020, i.e. the date which is 12 months after announcement of the Revised Tariff Determination. Hearing on the review motion filed in March 2019 was called on 18th December 2019. Keeping in view the fact that decision would take at least a month or so, leaving no more time to achieve financial close by 12th February 2020, the Company in the hearing withdrew its request for review motion and decided to file a new tariff petition before NEPRA for the determination.

Upon the Revised Tariff Determination, the Company also reinitiated the process to extend the validity of its L.OI. AEDB extended the validity period of the Company's L.OI on September 25, 2019 and AEDB has advised that this will be extended as soon as the AEDB board meets.

2.3 PROCESS LEADING TO TARIFF PETITION

The following milestones have been achieved leading up to the submission of tariff petition.

- Grid Interconnection Study was approved and Power Evacuation Certificate (PEC) was issued by NTDC on 11th November 2016 (Annexure 2).
- NEPRA granted generation license to the Project on 5th January 2017 (Annexure 3).
- IEE Study was approved by Sindh Environmental Protection Agency on 25th January 2017 (Annexure 4).
- The Feasibility Study was accorded approval by AEDB Panel of Experts on 15th November 2017.
- The land required for the Project has already been leased by Government of Sindh (GOS) for a period of thirty (30) years through Agreement of Lease dated 11th April 2018 (Annexure 5).
- Consent to purchase power from the Project was issued to the Company by CPPA-G ("Power Purchaser") on 19th August 2019 (Annexure 6).
- EPC Contracts for the Project have been executed (Annexure 7).
- Project debt funding (which is to account for 80% of the total project cost) has been arranged from a consortium of local and foreign banks (Annexure 8). The Sponsors of the Project will provide the remaining 20% of the project cost as in the form of equity investments.

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

Accordingly, it is submitted that the requirements of the regulatory process for application of the tariff determination have been completed.

2.4 REQUEST FOR TARIFF DETERMINATION - SUBMISSION

In accordance with the requirements of the NEPRA Act, NEPRA Rules and the Policy for Development of Renewable Energy Project 2006 (RE Policy), Petitioner hereby submits this Petition for determination/approval of the Reference Tariff (Negotiated Tariff under Cost-Plus regime) along with adjustments, pass-through items, indexation mechanisms and other terms and conditions for supply of electric power service to CPPA (G) (the "Power Purchaser") from the Project.

Pursuant to the relevant provisions of the NEPRA Act, NEPRA Rules, the RE Policy 2006, WEL submits herewith before NEPRA, this Petition for approval of

- the Reference Tariff (Negotiated Tariff under Cost-Plus regime);
- the indexations, adjustments and escalations;
- adjustments at Commercial Operations Date ("COD") and
- other matters set out in this Tariff Petition.

NEPRA (the "Authority") is requested to process the Petition at the earliest, thereby enabling the Project Company to proceed further with the development and construction process.

3. Executive Summary

3.1 BACKGROUND

Western Energy (Private) Limited (WEL) a 50 MW Wind Power Plant in Jhimpir, Nooriabad, District Thatta, Sindh. The Project is being developed for a concession period of 25 years.

| | |
|-----------------------------|------------------------------|
| • Type of Project | Build, Own and Operate (BOO) |
| • Gross Capacity: | 50 MW |
| • Capacity Factor: | 38% |
| • Annual Energy Generation: | 166.44 GWh |
| • Construction Period | 15 months |
| • Tariff: | USD Cents 4.7261/kWh |
| • Power Purchaser: | CPPA-G |
| • Wind Turbine Generators: | GE 2.5 - 132 |
| • Land Area: | 428 acres |
| • Exchange rate assumption: | PKR 166.75/USD |

3.2 PROJECT COST SUMMARY

Total project cost is estimated to be USD 63.92 million. The breakup of the same is presented below in USD millions.

| | |
|---------------------------------|-------|
| • EPC Cost: | 58.00 |
| • Project Development Cost | 2.500 |
| • Insurance During Construction | 0.290 |
| • Financial Fees and Charges | 1.216 |
| • Interest During Construction | 1.914 |

3.3 PROJECT FINANCING

The Project is financed through 80% Debt and 20% Equity. The total Debt amounts to USD 51.14 million, whereas the total Equity is USD 12.78 million.

The Debt is financed through a mix of Local and Foreign Lenders with 50:50 ratio. Faysal Bank Limited and Bank Al Habib is acting as the financier for local financing and the required foreign financing is being arranged by the Company through FMO, CDC, PROPARCO or all others International DFI's. The financing terms are tabulated below for reference.

| PROJECT FINANCING | | |
|--|------------|-------------|
| DESCRIPTION | PERCENTAGE | USD MILLION |
| Local Financing by Faysal Bank Limited & Bank Al Habib - SBP Refinance Facility | 50% | 25.57 |

| |
|------------------------|
| Table B-11 (continued) |
|------------------------|

| DESCRIPTION | PERCENTAGE | USD MILLION |
|---|------------|-------------|
| Foreign Financing – Commercial Facility | 50% | 25.57 |
| Total Debt | | 51.14 |

FINANCING TERMS

| DESCRIPTION | SBP FINANCING | FOREIGN FINANCING |
|-----------------|---------------------------|---------------------------------|
| Loan Term | 11.5 years | 14.5 years |
| Debt Repayment | 10 years | 13 years |
| Mark-Up Rate | 6 % | 3-M LIBOR (1.4505%) + 4.25 % |
| Repayment Style | Fixed Principal Repayment | Annuity |

3.4 OPERATIONAL PHASE COSTS

The Project will have annual Operations and Maintenance cost of USD 1.15 million and annual Insurance costs of 0.4% of the EPC amounting USD 0.23 million.

3.5 SUMMARY OF EPC SELECTION

WTG make and model GE 2.5 - 132 has been selected on the basis of site suitability, long term reliability and optimal yield.

A fair estimation of EPC cost has been taken into consideration on the basis of prevailing market trends and results of Company's discussions with EPC Contractors developing projects in Pakistan. The Company conducted its own competitive bidding process for selection of EPC Contractor and then executed EPC Contract with an experienced contractor for a reliable and cost efficient solution.

3.6 PROJECT TASKS COMPLETED

The Project is ready for construction and has completed the following milestones:

- Letter of Intent;
- Land Lease Signed;
- Land Allotment;
- Wind Mast Installed;
- Topographical Study;
- Transportation Study;
- Geo-technical Study;
- Wind Resource Assessment Study;
- Feasibility Study Approval;

6

- Grid Interconnection Study;
- Initial Environment Examination Study;
- EPC Agreements Signed; and
- Letter of Intent / Term sheet from Project Lenders

The Project has been in development since the issuance of LOI in 6th March 2013 by AEDB and all tasks and milestones had been completed to opt for Wind Upfront Tariff in 2016. This Project was one of the ten Projects with approved Interconnection Studies which were selected by Ministry of Water and Power, AEDB and EDGOS to be allowed the last Wind Upfront Tariff, however, at the last moment for unknown reasons, Central Power Purchase Agency ("CPPA-G") did not provide consent for power procurement due to which NEPRA returned Company's Tariff Petition filed prior to expiry of Wind Upfront Tariff.

The Company was advised by the concerned Authorities to await for a fresh Wind Upfront Tariff to be announced by NEPRA shortly. However, on 27th January 2017, NEPRA issued a Wind Benchmark Tariff Decision for bidding. Since that date, despite assurances that RFP shall be issued soon, no such RFP had been issued yet.

Company filed tariff petition before NEPRA for approval of reference generation tariff under cost plus mode on 27th November, 2017. The Authority announced Reference Tariff ("Tariff Determination") on 20th August 2018 and initially allowed 06 months to achieve financial close period from date of issuance of tariff determination. The Company filed motion for review on and requested to review some parameters of tariff.

The Tariff Determined was not "Bankable" and therefore no progress could be made on the project development during the pendency of the Review Motion. Decision on the motion for leave for review was made on 12th February 2019 and some of the key parameters i.e. capacity factor and interest rate were revised by the Authority. However, the time was achievement of financial close was extended to 12 months commencing from the date of original decision. Effectively, the Authority has allowed only six (6) months (from 12th February 2019 to 20th August 2019) to Company for achieving financial close.

The Company filed clarification letter ("Review Clarification") to Authority dated 25th March 2019 ("Review letter") to highlight that the one (1) year time period for achieving financial close from the date of the original tariff determination (which was based on some assumption which were not bankable) was not justified. The aforementioned review letter was later converted into a review motion in which Company requested Authority to extend the financial closing date till 12th February 2020, i.e. the date which is 12 months after announcement of the Revised Tariff Determination. Hearing on the review motion filed in March 2019 was called on 18th December 2019. Keeping in view the fact that decision would take at least a month or so, leaving no more time to achieve financial close by 12th February 2020, the Company in the hearing withdrew its request for review motion and decided to file a new tariff petition before NEPRA for the determination.

6

4. The Project

4.1 PAKISTAN'S CURRENT ELECTRIC POWER SHORTAGE

Pakistan currently has over 32 GW of installed capacity for electricity generation. Conventional thermal plants (oil, natural gas, coal) account for 65.5% of Pakistan's capacity, with hydroelectricity making up 28%, Renewable Energy (Wind, Solar & Bagasse) 3.4% and Nuclear 3.1%.

Pakistan is moving ahead towards solving its energy crises. A major contributor to this solution is the injection of electricity through base load power plants i.e. LNG and Coal based generation. Base load plants are generating electricity through imported fuels which increases the burden on the foreign exchange reserves. Therefore, it is imperative for Pakistan to look for indigenous/cheap energy resources for sustainable growth through self-reliance.

The 2019 Renewable Policy of GOP requires a substantial portion of renewable energy in the overall energy mix of the country to optimize the basket price. Pakistan has abundant renewable resources, which should be utilized to provide affordable electric energy to its people.

4.2 WIND POWER PROJECTS – A NATURAL CHOICE

To ensure a sustainable energy future for Pakistan, it is necessary that the energy sector be accorded a high priority. It is considered that wind power generation could become a significant contributor to Pakistan's electricity supply in the near future. The development of wind generation projects supports the environmental objectives of the Government of Pakistan by:

- reducing dependence on fossil fuels for thermal power generation;
- increasing diversity in Pakistan's electricity generation mix;
- reducing greenhouse gas emissions through avoidance of thermal power generation; and
- helping in reduction of the exorbitant trade deficit.

Pakistan has a huge wind potential which can be effectively and efficiently utilized for the economical generation of power. The coastal belt of Pakistan is blessed with a wind corridor that is 60 km wide (Gharo - Kati Bandar) and 180 km long (up to Hyderabad). This corridor has potential of 50,000 MW of electricity generation through wind energy that is ready to be exploited. Currently twenty four 24 wind energy projects having a combined capacity approx. 1,230 MW are operational and recently 12 wind energy projects having combined capacity of 610 MW achieved financial close in November 2019 and will achieve commercial operations by September 2021.

The Petitioner is hopeful that the country will overcome the power shortfalls faced in recent years and achieve security of base load soon. It is pertinent to note that wind power generation becomes even more useful in cases where secure base load is available. The cheaper electricity offered by wind projects can be utilized as much as possible when available and demand in low wind period can be supplemented through base load plants.

Tariffs for all base load plants are split between the Capacity Purchase Price (CPP-fixed costs) and Energy Purchase Price (EPP-fuel costs). Most of the base load plants have an EPP component (excluding capacity charge) higher than the total wind tariff. The Power Purchaser (and as a result the consumers) can realize significant savings by replacing expensive base load plants with wind power generation in high wind periods. It is also important to highlight the fact that high wind periods in Pakistan coincide with the highest demand periods (summer months). The Petitioner firmly believes that advantages of having wind power in the mix (including cost saving in generation of electricity) cannot be undermined.

4.3 ABOUT THE MAIN SPONSOR – TAPAL GROUP

Tapal Group, the lead Sponsors in 50 MW Western Energy (Private) Limited are the principals of Ameejee Valleejee & Sons (Private) Limited ("AVS"). Tapal Group is a major shareholders of Tapal Energy (Private) Limited, a 126 MW diesel engine based power project in operation for more than past 22 years.

Tapal Group comprise of Mr. Moiz Tapal, Mr. Tajwar Tapal, Mr. Tabish Tapal and Mr. Muhammad Sadiq Tapal. Tapal Group has been in business for the past 145 years. The reason for its successful existence in the highly competitive corporate sector for such a long period is its good standing as a professionally managed group.

Ameejee Valleejee & Sons (Private) Limited is a business house established in 1867 dealing in engineering and construction related products, chemicals and consumer products. It represents some of the most renowned international companies like Steinmuller, Lurgi, Standard, Chint, Buhler, Kessel, Henkels, Dorr Oliver, Atlas Copco etc. dealing in engineering equipment and has been a key player in installation of several power plants in public utility companies and various industries in Pakistan.

Western Energy (Private) Limited ("Project Company" or "WEL") is a private limited company incorporated under the laws of Pakistan and has been specifically established to undertake 50 MW Wind Power Project at Bholari, District Jhimpir, Sindh (the "Project").

4.4 ABOUT THE PROJECT

The 50 MW (gross) Wind Project is located at Jhimpir, District Thatta, Sindh. The development of the Project is being undertaken on a Build-Own and Operate (BOO) basis by WEL.

A professional team has been appointed to assist in the implementation of the Project. Bridge Factor has been appointed as Transaction Advisor, whereas a Renewable Resources (RE2) is selected as Technical Advisor and Axis Law Chambers is acting as Legal Advisor for smooth and efficient execution of the Project.

4.5 PROJECT LOCATION

The site for the implementation of the project has been selected considering

- location in the wind corridor,
- wind conditions at the site,

- topographic conditions,
- site accessibility, and
- location of the grid with reference to the site for interconnection.

The Site is located in Jhimpir, District Thatta, Sindh, which is one of the most promising areas where wind power projects can be viably installed. The Project's wind farm site is located 109 km from Karachi city in the East direction with easy road access.

The project has been surrounded by 50 MW Jhimpir Power (Private) Limited, 50 MW Hawa Energy (Private) Limited and 51 MW Shaheen Renewable Energy-1 (Private) Limited.

The major track from Karachi to Nooriabad is via the Karachi-Hyderabad Motorway, and another access to the Project site is through Jhimpir. When travelling via the Karachi-Hyderabad Motorway the access from Nooriabad to the site is a single track which turns toward the site.

However, the terrain is flat and long and heavy vehicles can easily navigate through this road. There are number of neighboring wind farms in the surrounding area of Jhimpir. The proposed site is located about 85 km from Port Qasim Karachi.

The Project site is exposed to strong winds; wind data analysis of the area suggests that 60% wind blows from the south west direction. The site is easily accessible through metaled roads. The terrain at the site and surrounding area has elevations varying between 44m to 88m.

The coordinates of Wind farm are given in Table below:

| SITE COORDINATES | | |
|------------------|----------------|----------------|
| | LATITUDE | LONGITUDE |
| 1 | 25°11'12.32" N | 68°02'44.02" E |
| 2 | 25°11'7.61" N | 68°02'40.98" E |
| 3 | 25°10'0.35" N | 68°04'29.78" E |
| 4 | 25°09'59.66" N | 68°04'30.91" E |
| 5 | 25°09'42.21" N | 68°05'8.50" E |
| 6 | 25°09'38.41" N | 68°05'5.14" E |
| 7 | 25°09'0.13" N | 68°05'4.99" E |
| 8 | 25°08'55.40" N | 68°05'1.84" E |
| 9 | 25°09'33.30" N | 68°04'11.44" E |
| 10 | 25°09'33.99" N | 68°04'10.28" E |
| 11 | 25°10'39.92" N | 68°02'23.60" E |
| 12 | 25°10'35.90" N | 68°02'20.53" E |

6

4.6 GRID CONNECTIVITY

The Project would be connected by a double circuit of 132kV looping in-out with a sub cluster also connecting nearby WPPs to Jhimpir - I 220/132 kV collector substation. Unlike, for majority of other wind projects which require a new grid to be constructed the Company has exiting grid availability like Master Green Energy Limited and Tricom Wind Power (Private) Limited

4.7 ANNUAL ENERGY PRODUCTION

Annual Energy Production of 166.44 GWh has been estimated for the project. The table below shows key details relating to power generation from the project.

ENERGY PRODUCTION

| | |
|--|------------|
| Total Installed Gross ISO Capacity of the Generation Facility - MW | 50 MW |
| Annual Energy Generation (25 years equivalent Net AEP) - kWh | 166.44 GWh |
| Net Capacity Factor | 38% |

6

5. EPC – Process & Selection

5.1 WTG TECHNOLOGY & EPC SELECTION

As explained in earlier sections, the Project is under development since 2013, and the Company opted for the upfront tariff of 2015 with CSIC WTGs model H11-2.0MW and CSIC as EPC Contractor. The Project was declared one of the active projects under China Pakistan Economic Corridor (CPEC) energy projects.

Since the upfront tariff was not awarded, the Company then applied for tariff under Cost Plus Regime. NEPRA announced Tariff Determination in August 2018, and initially only allowed six months to achieve financial close and the capacity factor initially approved was 42%. Since tariff determination parameters e.g capacity factor, financing rate, time for financial close etc. made the Project un-bankable, the Company initiated review proceedings on the Original Tariff Determination. In the review petition decision, the Authority addressed the key concerns related to capacity factor and financing cost and also extended the financial closing date till August 2019. However, the selected WTGs were still not able to meet the revised capacity factor of 38%, and also the project could not maintain its listing on the CPEC active project list, the EPC arrangement with CSIC was cancelled by the Company.

In order to file the new tariff petition and determine the most suitable WTGs at Site, fresh wind resource assessment was undertaken by the Company, detailed provided below, and GE 2.5 - 132 was found most suitable WTG at Site conditions.

For the selection of EPC Contractor, although the competitive bidding process as per NEPRA guidelines was not precisely followed, however, quotations were taken from multiple contractors. After thorough negotiations and based on the Wind Resource Assessment Studies on various WTGs having footprints in Pakistan, General Electric GE 2.5 - 132 is found most suitable WTG for the Project site. Therefore, the Company has finalized and selected Descon FZE as EPC Contractor with General Electric WTG.

The price of EPC contract is very competitive and in line with the market prevailing rates. Most importantly the Company in line with NEPRA directives has opted for a local EPC contractor, who in the past has successfully completed 5 wind projects which are operational since over 5 years. Furthermore, we would like to highlight that the EPC cost determined by Authority to other similar wind power projects which achieved financial close in November 2019 is comparable with the negotiated EPC price of our project.

5.2 WIND RESOURCE ASSESSMENT AND ENERGY ESTIMATES

The Petitioner engaged Renewable Resources (Pvt) Limited (RE2) of Pakistan backed by its foreign partners Tractebel Engie GmbH (TEG) of Germany to carry out a bankable Wind Resource and Energy Yield Assessment for the Project.

The wind studies have been carried out using wind data from a met mast that was installed in early 2017. Measurements were performed for approximately 14 months starting from 14.01.2017 to 30.03.2018. Out of the available data, a measurement period of 12 months from 01.04.2017 to 31.03.2018 was selected for the

annual average wind speed and wind direction having the highest data coverage period with good quality data, which is considered as a bankable time series. Analyzed average wind speed for the selected period is calculated as 7.81 m/s at 92.5 m height. For the assessment of long-term wind speed, the reference data set of ERA-5 and MERRA-2 has been considered and resulted in the coefficient of determination (R^2) of more than 80%. Resultantly, the long-term wind speed of 7.78 m/s is calculated at 92.5 m height above ground level (a.g.l.) at the mast location.

Twenty (20) General Electric wind turbines (GE 2.5 132) at 94 m hub height have been used for the Project. The micro-siting was performed based on the site-specific topographic map.

The WindPRO (ver.3.2) / WAsP (ver.11) software is used to estimate the wind conditions at each turbine location within the wind farm area based on the measured input wind data at a height of 92.5 m. The potential influence of all surrounding wind farms has been taken into account for the wake analysis. Losses are occurring along the whole energetic transformation chain from the rotor (kinetic energy) to the substation's delivery point (electricity) and have been considered based on turbine specifications and prudent assumptions.

Following losses have been considered to arrive at net energy number from the total gross:

- Wake Effects
- Availability
- Turbine Performance
- Electrical
- Environmental

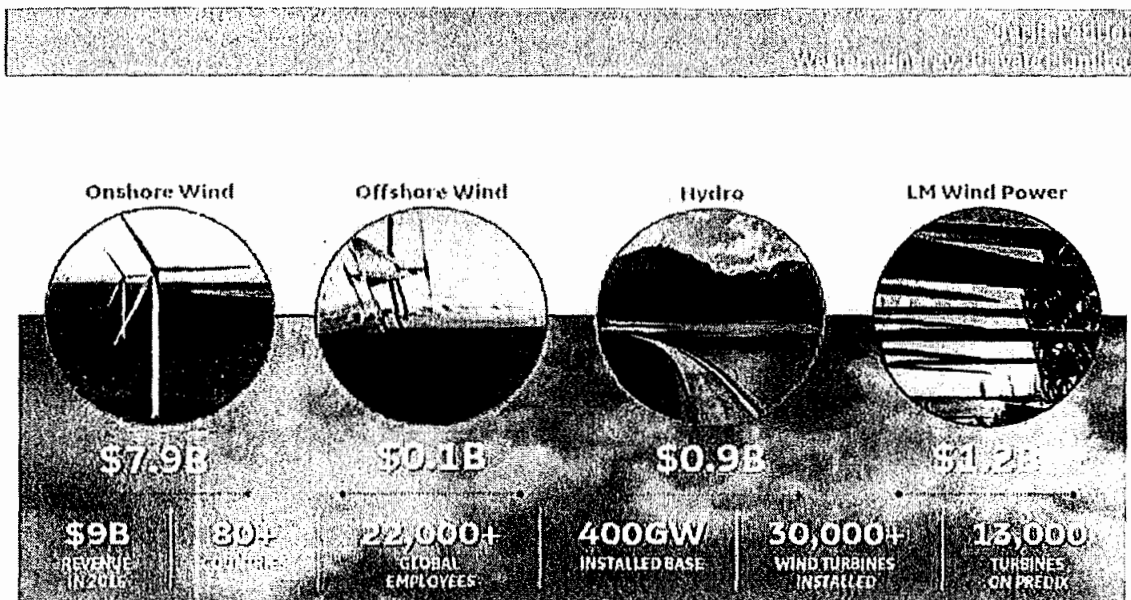
Additionally, an uncertainty assessment was also carried out. Uncertainty sources are associated to measuring equipment, data acquisition, data processing, energy model development, turbine parameters and energy estimation.

The expected energy output of the Project is determined as 166,440 MWh per annum, which translates into a 38% annual capacity factor; and is considered comparable with the recent cases in the sector utilizing similar technologies and the expectations of NEPRA.

5.3. GENERAL ELECTRIC – THE WTG MANUFACTURER

General Electric is among the world's leading suppliers of power generation technologies including coal, oil, nuclear energy, natural gas and renewable sources such as water, wind, solar, geothermal and alternative fuels. With over 30,000 wind turbines, their installed capacity of renewable energy exceeds 400 GW. Building on a strong power generation heritage and spanning more than a century, General Electric wind turbines have delivered proven performance, availability and reliability.

6



As one of the world's leading wind turbine suppliers, GE Energy's current product portfolio includes wind turbines with rated capacities ranging from 1.5 - 4.1 MW and support services extending from development assistance to operation and maintenance.

5.4. THE EPC CONTRACTOR – DESCON

Established in 1977, Descon's global presence spreads across United Arab Emirates, Saudi Arabia, Oman and Qatar from where new ventures are executed in Kuwait, Iraq and Egypt. The development and manufacturing of industrial process equipment and piping spool takes effect from our state-of-the-art plant. The strength of our experienced project team carrying operations have the essential ISO, OHSAS and ASME certifications in addition to our own QA & QC and HSE standards.

Descon is a multinational company renowned in the region for its quality, safety and on-time delivery of projects and products. All the faculties required to deliver turnkey projects, reside within the company. This unique strength enables us to provide solutions as EPCC (Engineering, Procurement, Construction and Commissioning) services provider to a host of international clients.

Descon Integrated Projects Limited (DIPL) is a state-of-the-art engineering office with 500 design personnel. Descon operates seven manufacturing/fabrication facilities in the region to supply industrial process equipment and bulk items like steel structure and piping spools.

Descon owns and operates chemical and power plants, with allied interests in inspection and testing. Descon Chemicals Business comprises of Descon Oxychem Limited. Descon Power Business takes shape in the form of Descon Power Solutions (DPS), providing power plant operations and maintenance (O&M) services for thermal and renewable power plants in Pakistan. Descon also owns two Independent Power Plants (IPPs), Altern Energy Limited, 32 MW gas based power plant and Rousch (Pakistan) Power Limited, a 450 MW combined cycle power plant.

Descon has been executing EPC for projects since the early 1990s based on in-house facilities for engineering design, manufacturing/procurement, construction, commissioning and maintenance wrapped up with the

overall project management expertise. The EPC Division is at the forefront of the Company's strategic direction to ascend the value chain by providing turnkey solutions tailored to the clients' requirements. The three operational Business Units in the Division include Engineering & Technology, Power and Oil & Gas with various projects executed worldwide and regionally. In wind power generation sector of Pakistan, Descon successfully executed Onshore works under EPC contract for 5 wind power projects which are successfully operating for more than 5 years.

The specifications of 2.5 MW GE 2.5 - 132 turbine are as follows:

| GENERAL ELECTRIC GE 2.5 132 | | |
|-----------------------------|---|--------------|
| | DESCRIPTION | SPECS. |
| 1 | Wind Turbine Type, Make & Model | GE 2.5 - 132 |
| 2 | Installed Capacity of Wind Farm (MW) | 50 MW |
| 3 | Number of Wind Turbine Units/Size of each Unit (MW) | 20 x 2.5 MW |
| 4 | Number of blades | 3 |
| 5 | Rotor diameter | 132m |
| 6 | Hub Height | 94m |
| 7 | Generator Voltage | 690 V |
| 8 | Cut-in wind speed | 3 m/s |
| 9 | Cut-out wind speed | 20 m/s |
| 10 | Extreme wind speed | 49 m/s |

6. Project Cost

The Project Cost is based on the firm EPC Contract comprising of the Offshore Contract and the Onshore Contract. The reference exchange rate used to convert the PKR denominated costs into United States Dollars is US \$ 1 = PKR 166.75.

A summary of the Project Cost is given below:

| PROJECT COST | | |
|--------------|-------------------------------|--------------|
| | DESCRIPTION | USD MILLION |
| 1 | EPC Cost | 58.00 |
| 2 | Project Development Cost | 2.50 |
| 4 | Insurance during Construction | 0.29 |
| 5 | Financial Fee and Charges | 1.21 |
| 6 | Interest During Construction | 1.91 |
| | Total Project Cost | 63.92 |

6.1 EPC COST

The scope of work to be carried out by the EPC contractor has been split into two parts, namely, onshore works and offshore works for which contract have been signed with Descon Engineering Limited and Descon Engineering FZE respectively; where offshore works primarily relate to procurement and supply of electrical and mechanical equipment outside Pakistan and onshore works comprise of civil works, erection, commissioning, testing, etc.

Total EPC cost for the project is US \$ 58.00 Million. As identified above, WEL adopted an effective and efficient process for procuring the services of EPC Contractor at the most competitive prices. WEL believes that the price as contracted with the EPC Contractor is reasonable as compared to recent tariff determination of wind power project and as per the prevailing market conditions.

EPC Cost

| | DESCRIPTION | USD MILLION |
|---|-------------------|--------------|
| 1 | Onshore EPC Cost | 12.00 |
| 2 | Offshore EPC Cost | 46.00 |
| | Total EPC | 58.00 |

WHT on Off-Shore EPC Contract:

Prior to amendments introduced by the Finance Act, 2018, the supply of goods by a non-resident person, in case of an overall arrangement for Engineering, Procurement, Construction and Commissioning projects in

Pakistan, was not subject to taxation under the Income Tax Ordinance 2001 if the supply was made outside Pakistan and the importer on record was the purchaser.

However, the Finance Act 2018 brought about amendments in Section 2(41)(g), Section 101(3) and certain provisions of Section 152 to tax the supply of goods by a non-resident even if the supply is made outside Pakistan and the importer on record is the purchaser. Pursuant to the aforementioned amendments in the tax laws through Finance Act, 2018, as per the domestic law, income on account of sale of goods by a non-resident person (even when imported by a Pakistani resident), whether or not title to the goods passes outside Pakistan, is now considered as Pakistan source income of the non-resident person's Permanent Establishment, and taxable as such.

We would like to highlight that there is a possibility that tax authorities may argue that since with Descon Engineering Limited and Descon Engineering FZE are associated, the employer is required to deduct 4% of the gross amount to be paid to Offshore Contractor. However, if the employer obtains an order from the Commissioner under section 152(4B), remittance may be allowed after deduction at 2.1% of the Offshore Contract payments.

In summary, we submit to the Authority that in past there was not income tax withholding on the EPC Offshore Contract payments, however, after the aforementioned changes in the tax laws the employer is now required to withhold income tax from the payments made to the Offshore Contractor. The EPC Price requested in this petition does not include any withholding tax and if the payments are subject to withholding income tax the price of the EPC Offshore Contractor will be adjusted accordingly. While the employer will do its best efforts to reduce the tax exposure in the EPC Offshore Price, we request the Authority to allow increase in the EPC Offshore price on account of withholding of income tax obligations applicable on the Project Company.

6.2 PROJECT DEVELOPMENT COSTS

This head includes the cost for development of Project and Land, it includes all costs, fees and expenses incurred or to be incurred for such purpose. A total of US \$ 2.50 million has been estimated as allowed in the recent wind tariff determinations under this head. These costs include costs of:

- Feasibility study costs including cost for Topographical survey of land, Geological and geotechnical study, Project layout study, and electrical study; and Transportation study etc.
- Costs related to the performance guarantee to be furnished to AEDB;
- Costs related to the Power Purchaser letter of credit to be furnished to the Power Purchaser pursuant to the provisions of the EPA;
- Various regulatory fees to be paid to NEPRA;
- Costs incurred during Project Company formation;
- Project Company staff salaries, allowances and other benefits;
- Project Company head office - development and running expenses during construction period;
- Travelling costs of Project Company staff for arrangement of financing agreements;
- Cost of security arrangement for the Project;

- Costs relating to various permits for the Project; and
- Project advisors, including cost of Local and Foreign Financial Advisors, Insurance Advisor, Audit and Tax Advisors, Security Advisors, Carbon Credit Advisors etc. and their travelling cost related to financial close.

Since 2013, the Project is in development phase, the Project Company has already paid Land lease and incurred Project development cost over USD 1.2 Million.

6.3 DUTIES AND TAXES

Duties and Taxes of non-refundable nature shall be adjusted at Commercial Operations Date, based on the actual cost incurred for which the Project Company shall submit documentary evidence to the satisfaction of the Authority.

6.4 INSURANCE DURING CONSTRUCTION

Insurance during Construction cost covers the insurance cost of the Project's assets during the construction period. Authority is hereby requested to allow Insurance during Construction at USD 0.290 million, which is 0.5% of the EPC Price, as is allowed in case of other wind power projects.

The Project, in view of the practices set by other IPPs in Pakistan and in accordance with the requirements typically set out by the Lenders funding the Project, intends to procure the following insurances during the construction phase of the Project:

- Construction All Risk Insurances (CAR);
- CAR Delay in Start-up Insurance;
- Terrorism Insurance;
- Marine and Inland Transit Insurance;
- Marine - Delay-In Startup Insurances; and
- Comprehensive General Liability.

6.5 FINANCIAL FEES AND CHARGES

Financial Fee & Charges include costs related to Debt Financing of the project. Such costs include fees and charges related to lenders up-front fee, lenders advisors & agents charges, commitment fee, management fee, charges related to various letters of credit to be established in favor of various contracting parties, fees payable and stamp duty applicable on the financing documents, agency fee, security trustee fee, L/C commitment fee/charges for EPC, commitment fee and other financing fees cost and charges.

The financial charges requested as part of the Project Cost i.e. USD 1.216 million which is 2.5% of the Debt as allowed to the similar wind projects, based on discussions held with the financial institutions and their experience regarding costs incurred on projects of such stature. Keeping in view the deteriorating country risk profile of the country and prevailing circular debt issue, higher financing cost is required to be incurred for obtaining financing for the project.

6

6.6 INTEREST DURING CONSTRUCTION

The Interest during Construction ("IDC") has been calculated on the basis of 15 months construction period at USD 1.914 Million on the terms offered by financial institutions and banks to the Project at 6% SBP refinancing facility for local financing and at 3-month LIBOR (@ 1.4505%) plus a spread of 4.25% for foreign loan. Actual IDC, however, shall be subject to change depending on the fluctuations in base rate, funding requirement (draw-downs) 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. Construction period assumed for IDC calculation is 15 months.

The spreads are considered to be reasonable given:

- Tenure for foreign financing has been to 14.5 years. In the past for 12 year funding the spread was 4.50% - 5%.
- Pakistan's balance of payment situation has deteriorated significantly during the past year which may cause a lowering of our Credit Rating.

6.7 RETURN ON EQUITY (ROE), ROE DURING CONSTRUCTION

The Return on Equity ("ROE") and Return on Equity during Construction ("ROEDC") have been estimated separately and the same are provided under Section 9.

Project Company hereby requests:

- ROE of 14% (IRR based) return on invested equity net of withholding tax.
- ROEDC at a rate of 14% over the remaining life of the Project.

In line with NEPRA's previous determinations, the ROE and ROEDC the Reference Generation Tariff 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.

It is pertinent to highlight that the withholding tax component has not been identified as a separate line item in the tariff as the same is assumed to be paid on all equity components i.e. ROE and ROE-DC, at actual as a pass-through item under the tariff.

6

7. Financing Arrangement

7.1 PROJECT FINANCING

The Project Cost is envisaged to be funded on the basis of a Debt: Equity ratio of 80:20, however, this shall be firmed up once the financing documents for debt financing have been executed prior to financial close. For the purpose of this Petition, a debt: equity ratio of 80:20 has been assumed, thereby resulting in the following debt and equity injections for the Project:

| FINANCING SUMMARY | | |
|-------------------|--------------------|-------------|
| | DESCRIPTION | USD MILLION |
| 1 | Debt | 51.14 |
| 2 | Equity | 12.78 |
| | Total Project Cost | 63.92 |

Key terms and condition of financing are provided in the table below:

| FINANCING TERMS | | |
|-----------------|------------------|---------------------------|
| | DESCRIPTION | |
| | | SBP REFINANCING |
| 1 | Base Rate | 6.0% |
| 2 | Spread | - |
| 3 | Total Rate | 6.0% |
| 4 | Repayment period | 10 years |
| 5 | Repayment basis | Quarterly |
| 6 | Repayment Style | Fixed Principal Repayment |
| | | FOREIGN FINANCING |
| | | 3-M LIBOR (1.4505%) |
| | | 4.25% |
| | | 5.7005% |
| | | 13 years |
| | | Quarterly |
| | | Annuity |

Sponsors are planning to inject 20% equity into the Project. The financing structure of 80:20 debt: equity might change later on based on mutual arrangement between Banks and Sponsors.

State Bank of Pakistan issued a revised scheme for Renewable Energy (RE) projects under III&SMEFD Circular No. 10 of 2019 on 26 July 2019, under which the SBP concessionary financing to Project was restricted to 50% of total financing requirement.

While approving financing under SBP RE Refinancing Scheme for other wind projects, SBP has recently directed that the repayment of the facilities under SBP RE Refinancing Scheme will be based on fixed principal repayment installments. Therefore, the debt schedule for the SBP financing based on the fixed principal repayment.

7.2 CARBON CREDITS

Wind Power is a clean form of energy and will reduce CO² emission. WEL intends to register for CDM emission reduction program. In case any income is generated from CDM, the same shall be shared in accordance GoP's prevailing policy.

8. Operations Cost

The operational cost of the Project comprises of the operations and maintenance cost, and the cost of the operational period insurances to be taken out by the Project Company.

8.1 O&M COSTS

This component caters for the cost of services rendered by the O&M operator that are dependent on the operation of the Project thereby determinable on a kWh basis. This component also includes costs expected to be incurred by the project locally; these include costs associated with local staff, administrative expenses, corporate fees, audit fees, advisory fees etc. This component also includes cost associated with replacement of parts necessitated due to regular operation / normal wear and tear. The O&M cost of USD 23,000/MW/annum equiv. to USD 1.15 million per annum is assumed by the Project Company to be incurred.

The O&M cost will be incurred in local as well as foreign currency – percentage of local: foreign components is specified below along with indexations applicable on the same:

| O&M COSTS | | |
|-------------|------------|--|
| DESCRIPTION | PERCENTAGE | INDEXATION |
| 1 Local | 50% | Pakistan CPI (General) |
| 2 Foreign | 50% | US CPI (All Urban Consumers) PKR / USD Indexation |

8.2 OPERATING INSURANCE COST

The insurance cost consists of operations all risk insurance for the project, as well as business-interruption insurance; these are standard insurances required by all lenders' and also set out under the EPA.

Aforementioned insurances are required to be maintained throughout the life of the Project. Since the Pakistan Insurance/Reinsurance industry does not have sufficient capacity and expertise to manage such huge risks entirely, therefore this risk is required to be insured/reinsured internationally. The risks' to be covered through insurance will include machinery breakdown, natural calamities (like earthquake, floods, etc.), sabotage and consequential business interruption, etc. The annual Insurance Cost is USD 0.23 million per annum which is computed at 0.4% of the EPC Price and is same as allowed to other recent wind power projects.

9. Reference Tariff

As the Project is 80% debt funded with loan tenure of 14.5 years for repayment for the foreign debt and 11.5 years for the local debt, this means that there will be higher debt service cost requirements in the first 13 years of the Project. In the last 12 years of the Project, the tariff will be decreased due to no debt service related costs.

The proposed tariff is for the life of the Project i.e. term of the EPA, to be signed with the Purchaser, which is 25 years from COD. The tariff is divided into three (03) bands i.e. year 1 - 10, 11-13 and year 14 - 25 to cover the variations due to the debt repayment period.

A summarized Reference Generation Tariff table setting out the two bands is provided below:

| REFERENCE TARIFF | | | | |
|------------------|-------------------|-----------|------------|------------|
| DESCRIPTION | | YEAR 1-10 | YEAR 11-13 | YEAR 14-25 |
| | | PKR/kWh | | |
| 1 | O&M - Local | 0.5761 | 0.5761 | 0.5761 |
| 2 | O&M - Foreign | 0.5761 | 0.5761 | 0.5761 |
| 3 | Insurance | 0.2324 | 0.2324 | 0.2324 |
| 4 | ROE | 1.7931 | 1.7931 | 1.7931 |
| 5 | ROEDC | 0.1617 | 0.1617 | 0.1617 |
| 6 | Debt Local | 4.0408 | - | - |
| | Servicing Foreign | 2.8033 | 2.8033 | - |
| Total | | 10.1834 | 6.1426 | 3.3393 |

9.1 REFERENCE GENERATION TARIFF

| Year | O&M | Insurance | ROE | ROEDC | Local Financing | | Foreign Loan | | Tariff | |
|------------------|--------|-----------|--------|--------|-----------------|---------|--------------|---------|---------|-----------|
| | | | | | Principal | Mark-up | Principal | Mark-up | Rs./kWh | US \$/kWh |
| | | | | | Rs./kWh | | | | | |
| 1 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 1.4793 | 1.3720 | 1.4312 | 10.1834 | 6.1070 |
| 2 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 1.3256 | 1.4519 | 1.3513 | 10.0297 | 6.0148 |
| 3 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 1.1719 | 1.5365 | 1.2668 | 9.8760 | 5.9227 |
| 4 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 1.0182 | 1.6266 | 1.1773 | 9.7223 | 5.8305 |
| 5 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 0.8645 | 1.7207 | 1.0826 | 9.5687 | 5.7383 |
| 6 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 0.7108 | 1.8209 | 0.9824 | 9.4150 | 5.6462 |
| 7 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 0.5571 | 1.9269 | 0.8764 | 9.2613 | 5.5540 |
| 8 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 0.4034 | 2.0391 | 0.7641 | 9.1076 | 5.4618 |
| 9 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 0.2497 | 2.1579 | 0.6454 | 8.9539 | 5.3696 |
| 10 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | 2.5615 | 0.0961 | 2.2835 | 0.5197 | 8.8002 | 5.2775 |
| 11 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | 2.4165 | 0.3867 | 6.1426 | 3.6837 |
| 12 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | 2.5572 | 0.2460 | 6.1426 | 3.6837 |
| 13 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | 2.7062 | 0.0971 | 6.1426 | 3.6837 |
| 14 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 15 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 16 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 17 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 18 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 19 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 20 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 21 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 22 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 23 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 24 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| 25 | 1.1521 | 0.2324 | 1.7931 | 0.1617 | | | | | 3.3393 | 2.0026 |
| Levelized Tariff | | | | | | | | | 7.8808 | 4.7261 |

*the requested levelized tariff is lower than the Recent Tariff awarded to similar wind projects by NEPRA on 100% Local financing.

6

9.2 REFERENCE DEBT SERVICING SCHEDULE – SBP FINANCING

Western Energy (Private) Limited SBP Debt Servicing Schedule

| Year | Base Amount (PKR) | Principal Repayment | Interest | Balance Principal | Principal Repayment PKR/kWh | Interest Repayment PKR/kWh |
|------|-------------------|---------------------|------------|-------------------|-----------------------------|----------------------------|
| 1 | 4,263,420,765 | 106,585,519 | 63,951,311 | 4,156,835,246 | 2.5615 | 1.4793 |
| 1 | 4,156,835,246 | 106,585,519 | 62,352,529 | 4,050,249,727 | | |
| 1 | 4,050,249,727 | 106,585,519 | 60,753,746 | 3,943,664,208 | | |
| 1 | 3,943,664,208 | 106,585,519 | 59,154,963 | 3,837,078,689 | | |
| 2 | 3,837,078,689 | 106,585,519 | 57,556,180 | 3,730,493,170 | 2.5615 | 1.3256 |
| 2 | 3,730,493,170 | 106,585,519 | 55,957,398 | 3,623,907,651 | | |
| 2 | 3,623,907,651 | 106,585,519 | 54,358,615 | 3,517,322,132 | | |
| 2 | 3,517,322,132 | 106,585,519 | 52,759,832 | 3,410,736,612 | | |
| 3 | 3,410,736,612 | 106,585,519 | 51,161,049 | 3,304,151,093 | 2.5615 | 1.1719 |
| 3 | 3,304,151,093 | 106,585,519 | 49,562,266 | 3,197,565,574 | | |
| 3 | 3,197,565,574 | 106,585,519 | 47,963,484 | 3,090,980,055 | | |
| 3 | 3,090,980,055 | 106,585,519 | 46,364,701 | 2,984,394,536 | | |
| 4 | 2,984,394,536 | 106,585,519 | 44,765,918 | 2,877,809,017 | 2.5615 | 1.0182 |
| 4 | 2,877,809,017 | 106,585,519 | 43,167,135 | 2,771,223,498 | | |
| 4 | 2,771,223,498 | 106,585,519 | 41,568,352 | 2,664,637,978 | | |
| 4 | 2,664,637,978 | 106,585,519 | 39,969,570 | 2,558,052,459 | | |
| 5 | 2,558,052,459 | 106,585,519 | 38,370,787 | 2,451,466,940 | 2.5615 | 0.8645 |
| 5 | 2,451,466,940 | 106,585,519 | 36,772,004 | 2,344,881,421 | | |
| 5 | 2,344,881,421 | 106,585,519 | 35,173,221 | 2,238,295,902 | | |
| 5 | 2,238,295,902 | 106,585,519 | 33,574,439 | 2,131,710,383 | | |
| 6 | 2,131,710,383 | 106,585,519 | 31,975,656 | 2,025,124,864 | 2.5615 | 0.7108 |
| 6 | 2,025,124,864 | 106,585,519 | 30,376,873 | 1,918,539,344 | | |
| 6 | 1,918,539,344 | 106,585,519 | 28,778,090 | 1,811,953,825 | | |
| 6 | 1,811,953,825 | 106,585,519 | 27,179,307 | 1,705,368,306 | | |
| 7 | 1,705,368,306 | 106,585,519 | 25,580,525 | 1,598,782,787 | 2.5615 | 0.5571 |
| 7 | 1,598,782,787 | 106,585,519 | 23,981,742 | 1,492,197,268 | | |
| 7 | 1,492,197,268 | 106,585,519 | 22,382,959 | 1,385,611,749 | | |
| 7 | 1,385,611,749 | 106,585,519 | 20,784,176 | 1,279,026,230 | | |
| 8 | 1,279,026,230 | 106,585,519 | 19,185,393 | 1,172,440,711 | 2.5615 | 0.4034 |
| 8 | 1,172,440,711 | 106,585,519 | 17,586,611 | 1,065,855,191 | | |
| 8 | 1,065,855,191 | 106,585,519 | 15,987,828 | 959,269,672 | | |
| 8 | 959,269,672 | 106,585,519 | 14,389,045 | 852,684,153 | | |
| 9 | 852,684,153 | 106,585,519 | 12,790,262 | 746,098,634 | 2.5615 | 0.2497 |
| 9 | 746,098,634 | 106,585,519 | 11,191,480 | 639,513,115 | | |
| 9 | 639,513,115 | 106,585,519 | 9,592,697 | 532,927,596 | | |
| 9 | 532,927,596 | 106,585,519 | 7,993,914 | 426,342,077 | | |
| 10 | 426,342,077 | 106,585,519 | 6,395,131 | 319,756,557 | 2.5615 | 0.0961 |
| 10 | 319,756,557 | 106,585,519 | 4,796,348 | 213,171,038 | | |
| 10 | 213,171,038 | 106,585,519 | 3,197,566 | 106,585,519 | | |
| 10 | 106,585,519 | 106,585,519 | 1,598,783 | - | | |

9.4 REFERENCE DEBT SERVICING SCHEDULE – FOREIGN FINANCING

Western Energy (Private) Limited Foreign Debt Servicing Schedule

| Year | Base Amount (USD) | Principal Repayment | Interest | Balance Principal | Principal Repayment PKR/kWh | Interest Repayment PKR/kWh |
|------|-------------------|---------------------|----------|-------------------|-----------------------------|----------------------------|
| 1 | 25,567,741 | 335,141 | 364,372 | 25,232,600 | | |
| 1 | 25,232,600 | 339,917 | 359,596 | 24,892,683 | 1.3720 | 1.4312 |
| 1 | 24,892,683 | 344,761 | 354,752 | 24,547,922 | | |
| 1 | 24,547,922 | 349,674 | 349,839 | 24,198,248 | | |
| 2 | 24,198,248 | 354,658 | 344,855 | 23,843,591 | 1.4519 | 1.3513 |
| 2 | 23,843,591 | 359,712 | 339,801 | 23,483,879 | | |
| 2 | 23,483,879 | 364,838 | 334,675 | 23,119,041 | | |
| 2 | 23,119,041 | 370,038 | 329,475 | 22,749,003 | | |
| 3 | 22,749,003 | 375,311 | 324,202 | 22,373,692 | 1.5365 | 1.2668 |
| 3 | 22,373,692 | 380,660 | 318,853 | 21,993,032 | | |
| 3 | 21,993,032 | 386,085 | 313,428 | 21,606,947 | | |
| 3 | 21,606,947 | 391,587 | 307,926 | 21,215,361 | | |
| 4 | 21,215,361 | 397,167 | 302,345 | 20,818,193 | 1.6260 | 1.1773 |
| 4 | 20,818,193 | 402,828 | 296,685 | 20,415,366 | | |
| 4 | 20,415,366 | 408,568 | 290,944 | 20,006,797 | | |
| 4 | 20,006,797 | 414,391 | 285,122 | 19,592,406 | | |
| 5 | 19,592,406 | 420,297 | 279,216 | 19,172,110 | 1.7207 | 1.0826 |
| 5 | 19,172,110 | 426,286 | 273,227 | 18,745,823 | | |
| 5 | 18,745,823 | 432,361 | 267,151 | 18,313,462 | | |
| 5 | 18,313,462 | 438,523 | 260,990 | 17,874,939 | | |
| 6 | 17,874,939 | 444,773 | 254,740 | 17,430,166 | 1.8209 | 0.9824 |
| 6 | 17,430,166 | 451,111 | 248,402 | 16,979,055 | | |
| 6 | 16,979,055 | 457,540 | 241,973 | 16,521,515 | | |
| 6 | 16,521,515 | 464,061 | 235,452 | 16,057,454 | | |
| 7 | 16,057,454 | 470,674 | 228,839 | 15,586,780 | 1.9269 | 0.8764 |
| 7 | 15,586,780 | 477,382 | 222,131 | 15,109,399 | | |
| 7 | 15,109,399 | 484,185 | 215,328 | 14,625,214 | | |
| 7 | 14,625,214 | 491,085 | 208,428 | 14,134,128 | | |
| 8 | 14,134,128 | 498,084 | 201,429 | 13,636,045 | 2.0391 | 0.7641 |
| 8 | 13,636,045 | 505,182 | 194,331 | 13,130,862 | | |
| 8 | 13,130,862 | 512,382 | 187,131 | 12,618,481 | | |
| 8 | 12,618,481 | 519,684 | 179,829 | 12,098,797 | | |
| 9 | 12,098,797 | 527,090 | 172,423 | 11,571,707 | 2.1579 | 0.6454 |
| 9 | 11,571,707 | 534,602 | 164,911 | 11,037,106 | | |
| 9 | 11,037,106 | 542,220 | 157,293 | 10,494,885 | | |
| 9 | 10,494,885 | 549,948 | 149,565 | 9,944,938 | | |
| 10 | 9,944,938 | 557,785 | 141,728 | 9,387,153 | 2.2835 | 0.5197 |
| 10 | 9,387,153 | 565,734 | 133,779 | 8,821,419 | | |
| 10 | 8,821,419 | 573,797 | 125,716 | 8,247,622 | | |
| 10 | 8,247,622 | 581,974 | 117,539 | 7,665,648 | | |
| 11 | 7,665,648 | 590,268 | 109,245 | 7,075,380 | 2.4165 | 0.3867 |
| 11 | 7,075,380 | 598,680 | 100,833 | 6,476,701 | | |
| 11 | 6,476,701 | 607,212 | 92,801 | 5,869,489 | | |
| 11 | 5,869,489 | 615,865 | 83,648 | 5,253,624 | | |
| 12 | 5,253,624 | 624,642 | 74,871 | 4,628,981 | 2.5572 | 0.2460 |
| 12 | 4,628,981 | 633,544 | 65,969 | 3,995,437 | | |
| 12 | 3,995,437 | 642,573 | 56,940 | 3,352,864 | | |
| 12 | 3,352,864 | 651,730 | 47,783 | 2,701,134 | | |
| 13 | 2,701,134 | 661,018 | 38,495 | 2,040,116 | 2.7062 | 0.0971 |
| 13 | 2,040,116 | 670,439 | 29,074 | 1,369,677 | | |
| 13 | 1,369,677 | 679,993 | 19,520 | 689,684 | | |
| 13 | 689,684 | 689,684 | 9,829 | - | | |

10. Indexations & Adjustments

10.1 INDEXATIONS

It is submitted that indexations be made on 1st January, 1st April, 1st July and 1st October respectively, on the basis of latest information available with respect to Consumer Price Index (CPI) (General), as notified by Pakistan Bureau of Statistics, US CPI (for all Urban-consumer) as notified by US Bureau of Labor Statistics and exchange rate as notified by National Bank of Pakistan.

10.1.1 Foreign O&M Cost Component

The Reference Foreign O&M Cost Component of the O&M Cost shall be quarterly indexed to both:

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

The applicable formula shall be as follows:

$$O\&M_{(FREV)} = \text{RELEVANT REFERENCE GENERATION TARIFF COMPONENT} * (US CPI_{(REV)} / US CPI_{(REF)}) * (FX USD_{(REV)} / FX USD_{(REF)})$$

WHERE

| | |
|------------------|---|
| $O\&M_{(FREV)}$ | the revised Foreign O&M Cost Component applicable for the relevant quarter |
| $US CPI_{(REV)}$ | the revised US CPI (for all Urban-consumers) for the month prior to the month in which indexation is applicable, as issued by the US Bureau of Labor Statistics |
| $US CPI_{(REF)}$ | the US CPI (for all Urban-consumers) for the relevant month, as issued by the US Bureau of Labor Statistics. |
| $FX USD_{(REV)}$ | the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan. |
| $FX USD_{(REF)}$ | Reference TT & OD selling rate of PKR/USD, of PKR 166.75 for USD1 |

10.1.2 Local O&M Cost Component

The Reference Local O&M Cost Component of the O&M Cost shall be quarterly indexed to the CPI (General) in Pakistan, as notified by the Pakistan Bureau of Statistics based on the following formula:

$$O\&M_{(LREV)} = \text{RELEVANT REFERENCE GENERATION TARIFF COMPONENT} * (CPI_{(REV)} / CPI_{(REF)})$$



WHERE

| | |
|-----------------------|--|
| O&M _(LRev) | the revised local O&M cost component applicable for the relevant quarter |
| CPI _(Rev) | the revised CPI (General) in Pakistan for the month prior to the month in which indexation is applicable, as notified by the Federal Bureau of Statistics. |
| CPI _(Ref) | the CPI (General) in Pakistan for the relevant month as notified by the Federal Bureau of Statistics |

10.1.3 Insurance Cost

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

The indexation of the Insurance Cost Component shall be based on the following formula:

$$\text{INSURANCE}_{(\text{REV})} = \text{RELEVANT REFERENCE GENERATION TARIFF COMPONENT} * (\text{FX USD}_{(\text{REV})} / \text{FX USD}_{(\text{REF})})$$

WHERE

| | |
|----------------------------|---|
| Insurance _(Rev) | the revised Insurance Cost Component applicable for the relevant year |
| FX USD _(Rev) | the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan. |
| FX USD _(Ref) | Reference TT & OD selling rate of PKR/USD, of PKR 166.75 for USD1 |

10.1.4 Return on Equity and Return on Equity during Construction

In line with NEPRA's previous determinations, the ROE and ROEDC the Reference Generation Tariff 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.

The applicable formula shall be as follows:

$$\text{ROE}_{(\text{REV})} = \text{RELEVANT REFERENCE GENERATION TARIFF COMPONENT} * (\text{FX USD}_{(\text{REV})} / \text{FX USD}_{(\text{REF})})$$

$$\text{ROEDC}_{(\text{REV})} = \text{RELEVANT REFERENCE GENERATION TARIFF COMPONENT} * (\text{FX USD}_{(\text{REV})} / \text{FX USD}_{(\text{REF})})$$

WHERE

| | |
|------------------|---|
| $ROE_{(Rev)}$ | the revised ROE component applicable for the relevant quarter |
| $ROE-DC_{(Rev)}$ | the revised ROE-DC component applicable for the relevant quarter |
| $FX USD_{(Rev)}$ | the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan. |
| $FX USD_{(Ref)}$ | Reference TT & OD selling rate of PKR/USD, of PKR 166.75 for USD1 |

10.1.5 Debt Component

Foreign Loan LIBOR: The principal and interest component of foreign loan will remain unchanged throughout the term except for the adjustment due to variation in 3 months LIBOR, while spread of 4.25% on LIBOR remaining the same, according to the following formula:

$$\Delta I = P_{(REV)} * (LIBOR_{(REV)} - 1.4505\%)/4$$

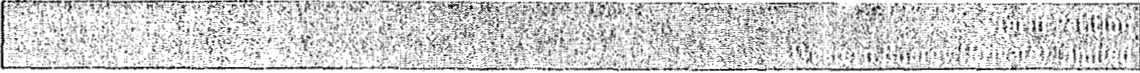
WHERE

| | |
|-------------|--|
| ΔI | the variation in interest charges applicable corresponding to variation in 3 month LIBOR. ΔI can be positive or negative depending upon whether $LIBOR_{(REV)} > \text{or} < 1.4505\%$. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each period under adjustment applicable on bi-annual basis. |
| $P_{(Rev)}$ | the outstanding principal on a quarterly basis at the relevant calculation dates. |

10.2 ADJUSTMENTS

The Project Company requests NEPRA to allow adjustment to the total Project Cost for the following items forming part of Project Cost:

- The Principal Repayment and cost of debt be adjusted at COD as per the actual borrowing composition;
- Interest During Construction be adjusted as per actual based on actual disbursement of loans and prevailing KIBOR and LIBOR rates during the project construction period;
- The specific items of Project Cost to be incurred in foreign currency (US\$) be adjusted at COD based on the PKR / US\$ exchange rate prevailing on the date the transaction was carried out;
- Customs duty and other taxes (including SIDS) be adjusted/allowed as per actual;
- Any negative financial implications resulting from changes in tax rates, duties etc. and currently applicable sales tax structure may kindly be adjusted in the Project Cost.
- Pre-COD Insurance Cost be adjusted at actual subject to a cap of 0.5% of the approved EPC cost in line with earlier tariff determinations by NEPRA for wind IPPs.
- Return on Equity be adjusted at COD in order to ensure an IRR based return of 14% on equity (while treating the project as a Build-Own-Operate type project).

- 
- ROEDC is to be allowed at the time of COD, as true-up adjustment, based on actual equity injections to the WEL by the Project Sponsors.

10.3 NON PROJECT MISSED VOLUME (NPMV)

The Petitioner expects that the Non-Project Missed Volume (NPMV) shall be paid by CPPA on the basis of the same energy generation estimate on which the tariff is based, that is, an annual capacity factor of 38%. The NPMV mechanism shall be similar to that agreed in the EPAs of twelve (12) wind power projects that achieved financial closing in 2019.

10.4 ENERGY SALE PRIOR TO COD

It is standard practice for wind power projects internationally to come online one WTG at a time, thereby, enabling the wind farm to commence dispatching energy to the grid as soon as a WTG is capable of power generation. Commissioning of a WTG cannot be completed without the substation being completed, tested and commissioned, therefore, all protection and safety equipment required to ensure smooth, safe operation of the wind farm (and the grid) would already be in place prior to commissioning of the WTGs. As soon as a WTG has been commissioned, it is ready to supply energy to the grid.

The standard EPA approved by the GOP permitted wind power developers to claim compensation from CPPA-G / NTDC for supply of electricity prior to achievement of COD. The same has been allowed to wind power projects developed under the upfront tariff regimes.

As it has been allowed for past wind IPPs, NEPRA is humbly requested to allow the Project to claim compensation from the Power Purchaser for all electricity supplied into the grid system prior to achievement of COD at the tariff rate applicable for the first year of operation minus the debt servicing components of the tariff.

11. Pass Through Items & Tariff Assumptions

11.1 PASS THROUGH ITEMS

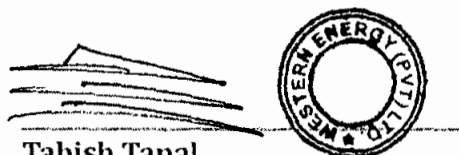
Authority is requested to allow following cost components as pass-through to WEL on the basis of actual costs incurred by Project Company or obligated to be paid in relation to the Project pursuant to Laws of Pakistan.

- No provision of income tax has been provided in the tariff. If the Project Company is obligated to pay any type of tax, the same should be allowed to the Project Company as pass through.
- No withholding tax on dividend has been included in the tariff. Authority is requested to allow payment of withholding tax on dividend as pass through at the time of actual payment of dividend.
- The payments to Workers Welfare Fund and Workers Profit Participation Fund have not been accounted for in the Project budget and have been assumed to be reimbursed as pass through at actual by the power purchaser.
- Zakat deduction on dividends as required under Zakat Ordinance is considered as a pass through;
- No tax on income of WEL (including proceeds against sale of electricity to CPPA) has been assumed. Corporate tax, turn over tax, general sales tax / provincial sales tax and all other taxes, excise duty, levies, fees etc. by any federal / provincial entity including local bodies as and when imposed, shall be treated as a pass through item;
- No hedging cost is assumed for exchange rate fluctuations during construction and all cost overruns resulting from variations in the exchange rate during construction shall be allowed as pass through;
- Any costs incurred by Project Company, which are required to be incurred by Power Purchaser pursuant to provisions of EPA shall also be treated as pass through.
- Taxes and charges that constitute as part of the Project Cost for construction period and operation period shall be treated as pass through.

11.2 ASSUMPTIONS

The proposed Reference Tariff is based on the following assumptions. A change in any of these assumptions will necessitate a corresponding adjustment in the Reference Tariff:

- Debt for the Project will be sourced from SBP RE refinancing scheme and foreign DFIs. Exact composition of local and foreign debt will be finalized prior to financial close; adjustment against the same will be requested at the time of COD;
- An exchange rate of PKR 166.75/USD of 31st March 2020 has been assumed. Indexation against PKR / USD variations will be permitted for debt servicing payments and all other project costs denominated in foreign currency. Tariff components shall be respectively indexed for exchange rate variations as discussed in Section 10;
- The timing of drawdown of debt and equity may vary from those specified in this Petition; as such, the Project Cost will be adjusted on the basis of actual IDC at COD. Similarly, ROEDC component will also be updated in the Reference Tariff;
- Similarly, adjustments in Project Cost due to variation in PKR / USD variations and LIBOR fluctuations will also be catered for at the time of COD;
- Taxes and Custom duties shall be claimed on actual at the time of COD tariff adjustment;
- Withholding tax at 8% on supplies and Onshore Contract. No withholding tax is anticipated on the Offshore Contract. In case there is any change in taxes etc., or additional taxes, fees, excise duty, levies, etc. are imposed, the EPC cost and ultimately the Project cost and the Reference Tariff will need to be adjusted accordingly;
- The power purchaser will compensate for energy delivered to the power purchaser prior to COD. For this purpose Energy Purchase Price shall be paid for all energy delivered prior to COD. Payments will be invoiced to the power purchaser as per mechanism specified in the EPA;
- The power purchaser shall be solely responsible for the financing, engineering, procurement, construction, testing and commissioning of the interconnection and transmission facilities up till the Project gantry point. Said facilities will be made available to the Project at least on or before the deadline set out in the EPA. Furthermore, the power purchaser will be solely responsible for operation and maintenance of the said interconnection and transmission facilities;
- Project contingency and maintenance reserves are not included in Reference Tariff calculations. If required by lenders, these will be adjusted accordingly in the Reference Tariff;
- In case of any unintentional error or omissions, typographic errors, and any genuine assumption being overlooked, the same will be corrected/incorporated and advised to NEPRA as soon as the Project Company becomes aware of it;
- Any additional indexation or concession allowed by the GOP, NEPRA or any other Govt. entity to any IPP will be allowed to WEL without any discrimination.



Tabish Tapal
Chief Executive Officer & Authorized Representative of
Western Energy (Private) Limited