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IRAN-PAK Wind Power (Pvt) Ltd

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[E-mail: planetgroup@ptcl.net](mailto:planetgroup@ptcl.net)

Ref: IPWPPL/NEPRA/17/19
Date: 20th March 2019

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

SUBJECT: TARIFF PETITION FOR NEGOTIATED TARIFF UNDER COST PLUS REGIME FOR IRAN PAK WIND POWER PVT LTD 50 MW WIND POWER PROJECT AT JHIMPIR DISTRICT THATTA, SINDH

Dear Sir,

I, Khurram Sayeed, Chief Executive Officer, being the duly Authorized Representative of Iran Pak Wind Power Pvt Ltd by virtue of the resolution of the board of directors dated 12th March 2019, hereby apply to the National Electric Power Regulatory Authority (NEPRA) for approval of Reference Generation Tariff inter alia; under the Section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of) 1997 (the "NEPRA Act") read with inter alia the Rule 3 of the Tariff Standards and Procedure Rules, 1998 (the "NEPRA Rules") made under the NEPRA Act and other applicable Rules, Regulations and Amendments and the Federal Government's Policy for Development of Renewable Energy Project 2006 (RE Policy).

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

A Banker's Cheque number 06117175 dated 26th March 2019, drawn on Bank Al Habib Limited M.A. Jinnah Branch Karachi, in the sum of PKR 607,052/- (Pakistan Rupees Six Hundred Seven Thousand Fifty Two Only) (less withholding tax 8%) being the non-refundable application processing fee calculated in accordance with NEPRA Application & Modification / Tariff Petition Fee valid upto March 2019, is also enclosed herewith.

I hereby further request the Authority to accede to my request for approval of Reference Generation Tariff for Iran Pak Wind Power Pvt Ltd with assumptions and conditions presented in the attached Tariff Petition.

Respectfully submitted for and in behalf of:

IRAN PAK WIND POWER PVT LTD

KHURRAM SAYEED
CEO



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- End: 1. Banker's Cheque number 06117175 dated 20th March 2019 for Rs.607,052/-
2. Tariff Petition (including Annexures) in triplicate
3. Affidavit of Mr. Khurram Sayeed — CEO
4. BOD Resolution of Iran Pak Wind Power Pvt Ltd
5. Challan of withholding tax payment of R. 52,787

SAT 7 e-se,)

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Dy. No. 2543
Dated: 25-03-19

IRAN-PAK Wind Power (Pvt) Ltd

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EXTRACT OF THE MINUTES OF THE 2ND/ 2019 MEETING OF THE BOARD OF DIRECTORS OF IRAN PAK WIND POWER PVT LTD HELD AT 10:00 AM AT IPWPPL OFFICE ,KARACHI

BOARD RESOLUTIONS:

The following resolutions were discussed in detail by the Board and approved unanimously:

"RESOLVED THAT IRAN PAK WIND POWER PVT LTD (a company incorporated under the laws of Pakistan with its registered office located at (Suite No 214, 2nd Floor Progressive Plaza Beaumont Road Karachi, Pakistan) (IPWPPL) be and is hereby authorized to file an application for cost plus Tariff in respect of the Company's [approximately 50 MW] wind power generation project to be located at District Thatta, Province of Sindh, Pakistan (the Project) and in relation thereto, enter into and execute all required documents, make all filings and pay all applicable fees, in each case, of any nature whatsoever, as required."

"FURTHER RESOLVED THAT in respect of filing he said application, under the NEPRA Tariff Standards and Procedure Rules , 1998 (the "NEPRA Rules"), to the Authority, MR. KHURRAM SAYEED, CHIEF EXECUTIVE OFFICER of the Company be and is hereby singly empowered and authorized for and on behalf of the Company to:

- (i) review, execute, submit, and deliver the application (including any re-filings and matters ancillary or incidental thereto) and any related documentation required by the Authority under the Regulations, including any contracts, documents, powers of attorney, affidavits, statements, letters, forms, applications, deeds, guarantees, undertakings, approvals, memoranda, amendments, letters, communications, notices, certificates, requests, 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 NEPRA, 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 Authority as needed, and do all acts necessary for completion and processing of the said application for cost plus tariff;
- (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 submit the said application with NEPRA, make communications with, make presentations to and attend any/all of NEPRA's hearings;
- (v) do all such acts, matters and things as may be necessary for carrying out the purposes aforesaid and giving full effect to the above resolutions/resolution".



IRAN-PAK Wind Power (Pvt) Ltd

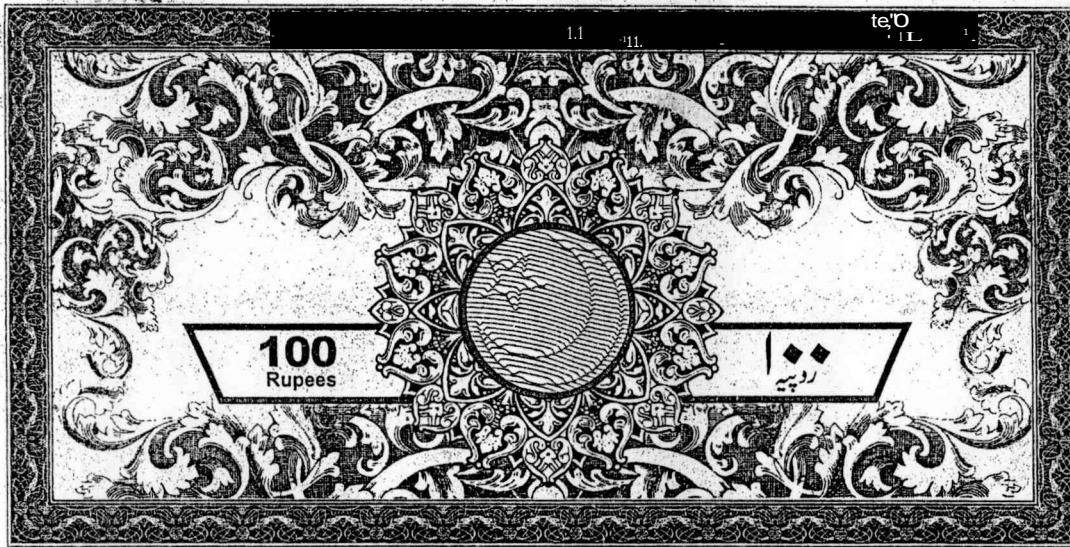
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"Further Resolved That Mr. Khurram Sayeed, Chief Executive Officer of the Company be and is hereby singly authorized to delegate all or any of the above powers in respect of the foregoing to any other officials of the Company as deemed appropriate."

Certified Copy:



Company Secretary



Ida Muhammad Khan Stamp Vendor

Licence 0.09, Shop No, 205 Iora Complex
Slocx -11, Gulbtan-e-Johar, Karachi

S.No

DATE

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BEFORE THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT

I, Mr. Khurram Sawed son of Tariq Sawed CNIC No. 42201-4088735-5; Chief Executive Officer of Iran Pak Wind Power Pvt Ltd hereby solemnly affirm and declare on oath that the contents of the accompanying application for cost plus tariff for Wind Power Generation 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: _____

ante: Khurram Sayeed

Dated: 20th March 2019



ATTESTED

ZAHOR-UL-HAQ
Trevocate
FonimISSioner
Karauhl•Paklstges

BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY
AUTHORITY

COST - PLUS TARIFF PETITION
PURSUANT TO NEPRA (TARIFF STANDARDS AND PROCEDURE RULES , 1998
READ WITH THE PROVISIONS OF
THE REGULATION FOR GENERATION, TRANSMISSION AND DISTRIBUTION OF
ELECTRIC POWER ACT (XL OF) 1997 & THE RULES AND REGULATION MADE
THEREUNDER

IN RESPECT OF
IRAN PAK WIND POWER PVT LTD (IPWPPL)

FOR NEPRA'S APPROVAL OF REFERENCE GENERATION TARIFF

FOR A WIND POWER PROJECT OF 50 MW
AT DEH KOHISTAN 7/3 TAPO JUNGSHAHI TALUKA ,
DISTRICT THATTA, SINDH, PAKISTAN

DATED :20TH MARCH 2019



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1. Petitioner's Information:

Name: Iran Pak Wind Power Pvt Ltd

Address: Suite# 214, 2nd Floor, Progressive Plaza, Beaumont Road, Karachi. Pakistan

Company Registration No : 0071078

Email : planetgroup@ptcl.net

Project Sponsors : Sunir Co , Iran

Representative of the Petitioner : Khurram Sayeed , Chief Executive Officer

Project Advisors :

Technical Advisor : GNEC, Iran

Legal Council : Sayeed .A. Sheikh & Co



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, the Authority 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. NEPRA is also responsible for determining the process and procedures for reviewing and approving tariffs and adjustments.

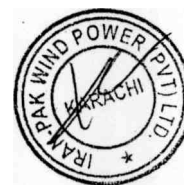
2.2 : ABOUT THE PETITIONER :

Iran Pak Wind Power Pvt Ltd (IPWPPL) (Project Company), a company incorporated on 15th December 2009 under the laws of Pakistan vide Corporate Universal Identification No. 0071078 under section 32 of the Companies Ordinance , 1984 (XLVII OF 1984) to develop, own and operate an approximately 50 MW wind power project in District Thatta (Project) pursuant to a Letter of Intent (LOI) issued by Energy Dept Govt of Sindh dated 8th March 2016 vide its Letter No. DAE/Wind/50/2015/63 (Annexure 1). The project is to be developed under the guidelines (policy for development of renewable energy projects 2006 (RE Policy)) issued by Government of Pakistan.

2.3 : PROCESS LEADING TO TARIFF PETITION :

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

1. 1,250 acres of Land in Deh Kohistan 7/3 Tapo Jungshahi Taluka , District Thatta for the project has already been leased from Land Utilization Department Government of Sindh for a period of 30 years through Agreement to Lease dated 30th Oct 2013 and Amendment In the Lease Agreement dated 19th June 2017. (Annexure 2)
2. Pursuant to the relevant provisions of the policy for development of renewable energy power generation 2006 (the RE Policy) and the Letter of Intent (LOI) the project completed the technical feasibility study and submitted to Panel of Experts , EDGOS on 31st March 2016 (Annexure 3).
3. Wildlife approval was issued to the company on 2n^d Nov2016 (Annexure 4)
4. The technical consultants completed the Initial Environment Examination for the Project and submitted to the Sindh Environmental Protection Agency in May 2015 and the same was approved in Nov 2016 (Annexure 5).



5. Grid Interconnection Study was approved by NTDCL on 22nd March 2017 via Letter No. GMPP/CEMP/TRP-380/1513-22 (Annexure 6).
6. Power Evacuation Certificate was issued to IPWPPL on 31st March 2017(Annexure 7).
7. Request for issuance of Consent of Power Purchase has been made to CPPA (G) Power Purchaser on 22nd March 2017 (Annexure 8).
8. Generation License application was submitted to NEPRA in June 2016. NEPRA granted Generation License to the project on 30th June 2017 (Annexure 9) and an application for Amendment due to the change of WTG is in the process of submission.
9. EPC and O&M contracts for the project have been executed. (Annexure 10).
10. Project debt funding (75% of the project cost) has been arranged from local and foreign banks (Annexure 11) . The sponsors will inject the remaining 25% of the project cost as equity investment.

All requisite information required by NEPRA for processing the Petition has been annexed herewith; IPWPPL 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 applying to NEPRA for the tariff determination of IPWPPL s 50 MW power generation facility to be located at District Thatta, Sindh have been completed.

2.4 REQUEST FOR TARIFF DETERMINATION — SUBMISSION :

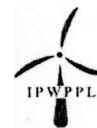
In accordance with the requirements of the NEPRA Act, NEPRA Rules and the Policy for Development of Renewable Energy Project 2006 (RE Policy), Petitioner hereby submits this petition for determination/ approval of the Reference Tariff (Negotiated Tariff under Cost-Plus regime) along with adjustments , 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, IPWPPL submits herewith before NEPRA , this petition for the 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 in each case for the project company's power generation project to be located at District Thatta Sindh

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 :

IPWPPL is a SPV sponsored by the Sunir Co, Iran for the development of a 50 MW wind power project in district Thatta Sindh. The project is being developed for a concession period of 25 years and the company has 1250 acres of land under a lease agreement signed with the GOS. The salient features of the project are summarized below :

Type of Project	Build , Own and Operate (BOO)
Gross Capacity	50 MW
Capacity Factor	38%
Annual Energy Generation	164.775 Gwh
Construction Period	18 months
Tariff	USD cents 7.4755/kWh
Power Purchaser	CPPA — (G)
Wind Turbine Generators	Seimens — Gamesa
Land Area	1250 acres
Exchange Rate assumptions	PKR 110/USD

3.2 PROJECT COST SUMMARY :

After carrying out a competitive bidding process for EPC and thorough market research and analysis the total project cost works out to be USD 88.657 Million. The breakup is as follows :

EPC Cost	78.901
Project Development Cost	3.515
Insurance During Construction	0.512
Financial Fees and Charges	1.862
Interest During Construction	3.866

3.3 PROJECT FINANCING :

The project is financed through 75% Debt and 25% Equity. The total Debt amounts to USD 66.492 million, whereas the total equity is USD 22.164 million. The Debt is financed through a mix of local and foreign lenders with 40:60 ratio. Leading local bank is the lead financier in local financing and the foreign financing is being arranged through foreign bank. The financing terms are as under :





Description	Percentage	USD Million
Local	40%	26.5968
Foreian	60%	39. 8952
Total Debt	100%	66.492

PIN8NPINPr faUt. :: .	Local Financing	Foreign Financing
Description	13 years	13 years
Loan Term	Quarterly	Quarterly
Debt Repayment	3 M kibar + 2.5%	3 M Libor + 4.25%
Mark up Rate		

3.4 OPERATIONAL PHASE COSTS :

The project will have annual operation and maintenance cost of USD 1.90 million and annual insurance costs of USD 0.394 million.

3.5 SUMMARY OF EPC SELECTION :

The Project Company carried out a competitive bidding process for selection of EPC contractor for the project. For this purpose an RFP was issued to following EPC contractors /WTG manufacturers :

1. Vestas Denmark
2. HydroChina Corporation
3. Nordex Germany
4. Orient Pakistan
5. Shanghai Electric China
6. XEPCC China

Based on technical and financial evaluation Hydro China Corporation with Seimens Gamesa (G114-2.0) was declared as the preferred bidder and accordingly an EPC contract has been executed with them.



3.6 PROJECT TASKS COMPLETED :

The project has completed all development tasks and is ready for construction. The tasks completed are

- Letter of Intent
- Topographical Study
- Land Allotted
- Installation of Wind Masts
- Land leased
- Collection of Wind Data
- Energy Assessment Yield/WRA
- Transportation Study
- Geotechnical Study
- Grid Interconnection Study
- Wildlife NOC
- Initial Environment Examination
- Feasibility Studies
- GIS Approval NTDC
- Power Evacuation Certificate
- Generation License
- Term Sheet from Project Lenders
- EPC & O&M Agreement Signed

The project has been in development since the issuance of first LOI in 2006 from AEDB , thereafter even after a lapse of seven years land could not be arranged by AEDB and once the land was arranged by the project company from GOS, there was no grid availability for three years. Once Grid was approved there was no tariff available for almost two years. Now the project has completed all the milestones set out in the LOI by EDGOS dated 8th March 2016.

The project had the Grid Interconnection study prepared and submitted to CPPA — G and even though it had the first right to be allocated Grid; however it was not selected in the ten projects by the Ministry of Power, AEDB and EDGOS at the time and the case was also brought to the attention of NEPRA.

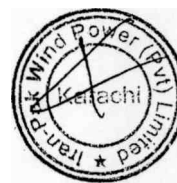
The company opted for the last upfront tariff however NEPRA returned the tariff petition on the basis of non-availability of purchaser's consent and power evacuation certificate.

Since the expiry of the last upfront tariff, NEPRA did not issue another upfront tariff and instead issued a wind benchmark tariff decision on 27th January 2017 for bidding. Since that date despite assurances from GOP relevant departments ; no RFP for competitive bidding was issued. And the tariff also expired.

Thereafter the CCOE decision of 12th Dec 2017 had said that all future RE projects will be based on competitive bidding; however on the other hand NEPRA issued its decision that any party can apply for cost plus tariff under the Tariff Standard Procedure and Rules 1998.

Therefore ; there was clearly a confusion with regards to the policy and the foreign sponsors of the IPWPPL project decided to wait for the policy clarification and held back their application for tariff even though they were eligible to apply i.e had the Generation License / Grid.

Now that the clarification has come and the projects are moving forward on cost plus tariff therefore now the project company is rightly submitting this petition before the authority to determine reference tariff under cost plus tariff regime.



4. The Project :

4.1 PAKISTAN'S CURRENT ELECTRIC SHORTAGE :

Pakistan currently has around 25.5 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. However, since LNG and some coal power plants are being based on imported fuel hence it will continue to have adverse effect on the current account deficit of the country which is a critical issue for economy moving forward. Moreover; base load plants are generating electricity through imported fuels which also increases the burden on the foreign exchange reserves.

Keeping this in mind and the fact that Pakistan still needs to generate electricity to meet future ever increasing demand due to expected increase in population and GDP growth rate ; it is imperative for Pakistan to look for self-reliance. Moreover, there should be considerable portion of renewable energy in the overall energy mix of the country to optimize the basket price.

Under the circumstance renewable energy especially wind power is an ideal solution having higher capacity factors , no environmental impacts and no imported fuel.

Pakistan has abundant renewable resources including wind power which should be fully utilized to provide clean and affordable electricity for its people like in other developed countries.

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:

- (a) reducing dependence on fossil fuels for thermal power generation;
- (b) increasing diversity in Pakistan's electricity generation mix;
- (c) reducing greenhouse gas emissions through avoidance of thermal power generation: and
- (d) 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 15 wind energy projects having a combined capacity of 788.5 MW are operational and 9 wind energy projects having a combined capacity of 445.8 MW are at different stages of construction.



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.

4.3 ABOUT SPONSORS :

A. MAJOR SPONSOR , SUNIR CO, IRAN:

The main sponsors M/s Sunir Co (Iran Power & Water Equipment & Services Exports Co) incorporated and registered under the laws of Islamic Republic of Iran since 1994 have considerable experience in power generation , transmission ,evacuation and EPC services since last 22 years. Sunir company consist of 21 shareholders, 5000 employees and considerable numbers of strategic partners in Power, Water, Sewage and Construction Sectors.

Their Worldwide presence extends from CIS market to South Asia, to the Middle East, to African continent and to Latin America, spanning 18 countries having projects worth over US \$ 1.5 billion. The turnover of Sunir Co and its subsidiaries is around US \$ 5.0 Billion.

Sunir Co has been active in Pakistan since last 11 years having also established office in Lahore. They have vast experience in Pakistan power sector especially in the transmission, dispatch and evacuation areas and are now presently undertaking projects in Pakistan worth over US \$ 100 Million as detailed below:

1. DaduKhuzdar 145 km , 220 kv Transmission line Project.
2. Khuzdar 220/132 kvAIS substation.
3. Iran Border — Gwadar 75 km, 220 kv Transmission line and GIS substation at Gwadar Project [Phase 1]
4. Supply of 250 MVA Transformers at Gwadar [Phase 2]
[Sunir Co Arranged E51 Million Loan To NTDC]
5. Sibbi- Shikarpur — Guddu 84 km, 500/220kv Transmission line project.

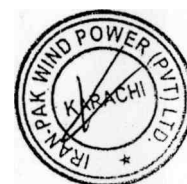
B. TUFAIL GROUP :

The other minor sponsor of Iran Pak Wind Power (Pvt) Ltd., is Tufail Group established in 1953. Mainly engaged in manufacturing, import & export of Industrial Chemicals from Europe, Asia & Middle East since last 62 years. The Group has experience of running small Coal based Power Plant for their captive use in Karachi.

The Annual turnover of the Group is Rs: 10.40 Billion or approximately USD:100 Million.

4.4 PROJECT BACKGROUND :

In 2006 one of the largest Water & Power company's of Iran M/s Sunir Co showed interest in setting up a 50 MW Wind Farm in Pakistan on JV basis. First MOU in this regard between Sunir Co and Pakistani



Consortium was signed in Feb 2006 and together they approached AEDB for the issuance of LOI for 50 MW Wind Farm; which was issued in 2006. In the meantime; a follow up MOM was signed during the visit of Iranian Energy Minister Engr. Parviz Fattah and as a result a special purpose vehicle M/s Iran Pak Wind Power Pvt Ltd was established in December 2009 for carrying out the project. As per Article 2 of the LOI , the AEDB was to facilitate and lease out land for the project to the sponsors upon its availability from Government of Sindh and added them in the queue for land allocation. However; with the passage of time AEDB could not provide the land to the sponsors till 2010. Since the Article 3 of the subject letter stated that the sponsors have the option to proceed for the acquisition of its own land, therefore accordingly; in 2010 the sponsors approached the Government Sindh for allocation of land for its 50 MW project and gave them a detail presentation on Wind Corridor in Jhimpir and identified the land with good wind resource.

Consequently ; a MOU was signed with Sindh Board of Investment back in April 2010 after which survey was carried out and availability of land was confirmed in the location in which it was desired. In February 2011; the Sindh Government allotted the requisite land to the sponsors; but the right of way and possession was not given to sponsors until Oct 2013.

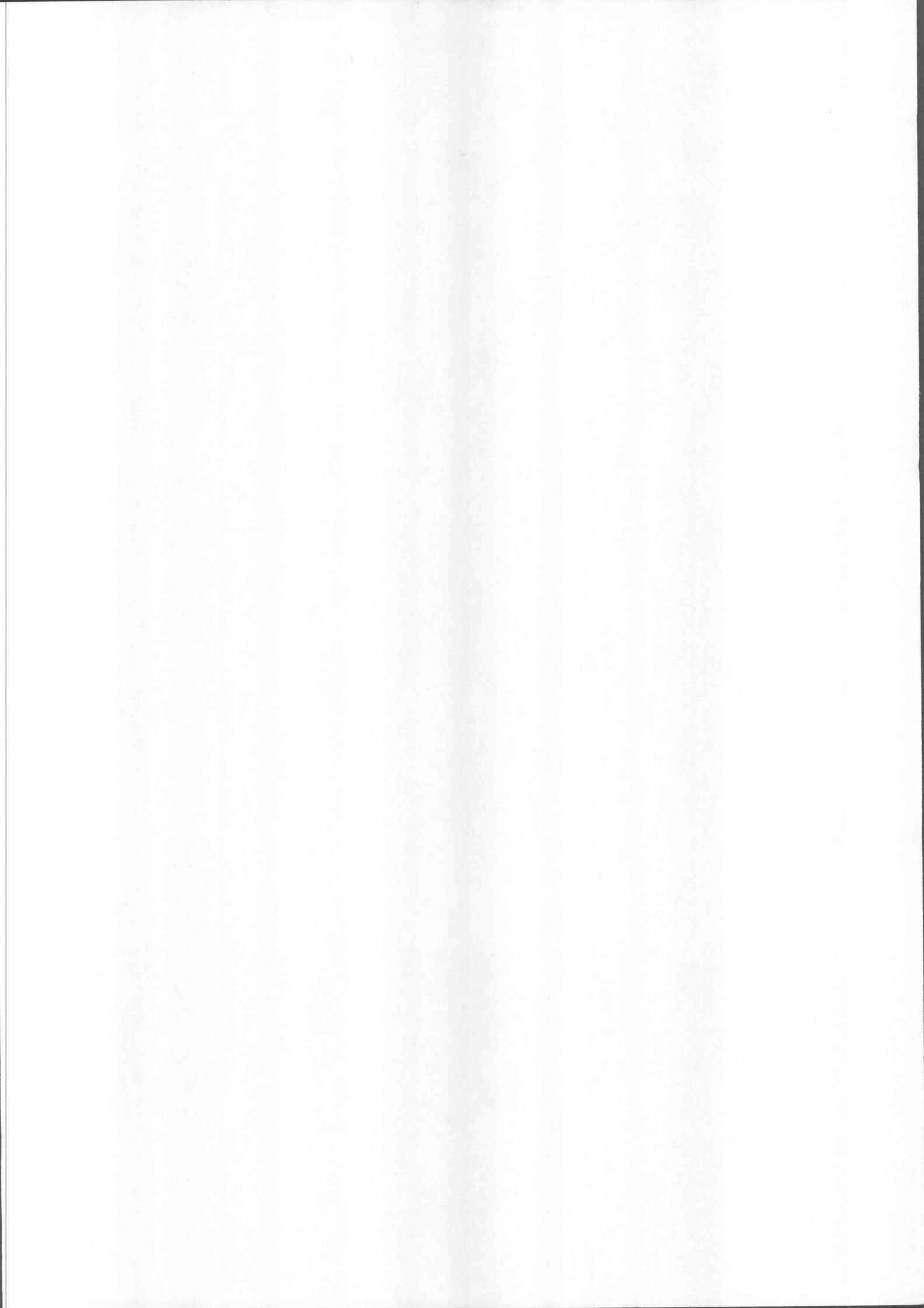
There were many reasons for this delay; including but not limited to : During the period Feb 2011 and Aug 2011; three different corrigendums were issued for various corrections in the allotment letter such as Rs 2/ sqyd rent was being charged in the original allotment letter; which was against the spirit of the announced policy and its removal also caused delays. During July 2011 and Sept 2012 ; on more than three occasions the Sindh local bodies system was changed between Commissionerate and LG; which caused considerable delay in completing the paperwork. In may 2012; the Sindh Government also changed the land allotment policy to footprint policy ; which again was against the spirit of announced incentive; therefore this also caused considerable delay.

During this time the sponsors are also credited with initiating some landmark changes to the policy of land allotment for Wind Power Projects which later propelled the wind market into the mainstream; fruits of which are being born by investors today and these changes were mainly :

- Change of time period for completion of wind power projects from 2 to 5 years.
- Removal of Rs. 2 per sq. yd rent on land.
- Change in benchmarks of timeline from date of allotment to date of possession.
- Pointed out the deficiencies in "Foot Print" Policy such as Oil/ Gas execution in the middle of project land , hunting permission etc which resulted in the reversal of the policy benefitting the whole industry.

Since then the Applicant conducted various studies to assess the feasibility of the Project as outlined in section 3.







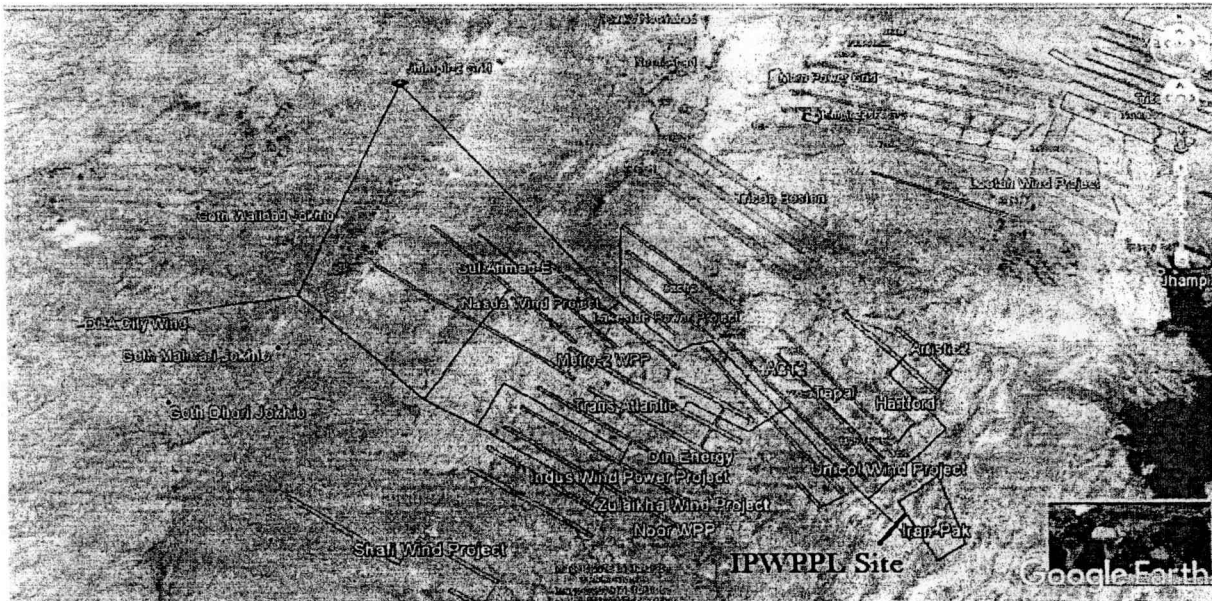
4.5 PROJECT LOCATION :

The proposed site for the implementation of the Project was selected after detailed analysis of USAID Pakistan Wind Power Resource Map by considering

- (I) location in the wind corridor
- (II) wind conditions at the site
- (III) topographic conditions
- (IV) site accessibility
- (V) location of the grid with reference to the site for interconnection.

The site is located within the wind corridor identified by SED/USAID and the land has been obtained from Sindh Government.

The Wind Farm is located about 20 km from Jhimpir in Thatta District of Sindh province in Pakistan, 100 km North-East of Karachi with easy road access from both Nooriabad Industrial Estate and from Makli Thatta.



The Project site is exposed to very strong south westerly winds; wind data analysis of the area suggests that 40% wind blows from the south west direction. The terrain of the area is flat with some change in altitude. The proposed site lies under roughness class 1.5 as there is low vegetation. The site is easily accessible through metallic roads. The ground is hard and rocky; the subsurface soil also includes clay and silt. There are few hilly areas in the middle of the project land which is 2.5 x 2.5 km rectangular shape.





4.6 SITE ACCESSIBILITY :¹

The Project is located on Makli- Bahadurabad Road with Jhimpir city to the east of the project. The machinery for the project will be routed which is on the eastern side of the Karachi city and the site will be accessed from the Super Highway connecting Karachi to Hyderabad based on following .

There were two options to transport Heavy Machinery

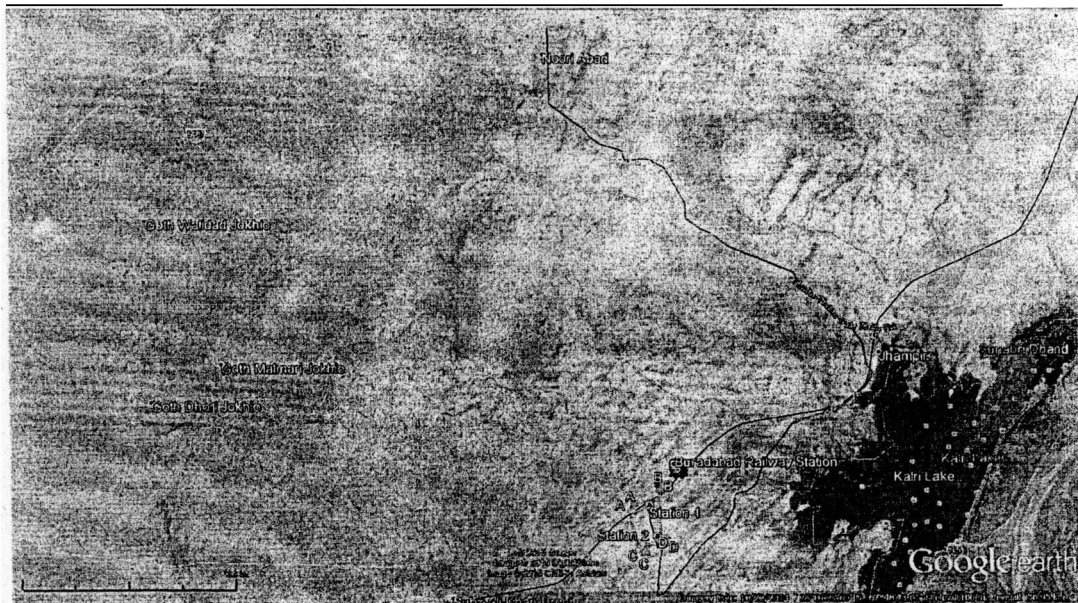
i. National Highway – Makli – Site :

Detailed study was carried out from National Highway up to Makli and then connecting project site via access route going up to Bahadurabad Railway Station.

This route was not acceptable for movement of heavy machinery especially large blades and heavy turbine through Makli and beyond to site.

ii. Karachi - Hyderabad Motorway - Nooriabad - Site :

Detailed study was carried out from Motorway to Nooriabad and connecting project through bypass road before Jhimpir city to the project site. This option was suitable for heavy generator sets as well as large turbine blades.



4.7 WIND FARM LAYOUT :

Site coordinates for each of 25 WTGs (micro-siting) to be installed are as follows

50MW IRAN PAK WIND POWER PROJECT		
TURBINES COORDINATES (UTM WGS 84)		
No.	N (X)	E (Y)
	808648.934	2125564.244
2	808301.870	2125689.574
3	807954.806	2125814.904
4	807607.7.2	2125940.234
5	807260.678	2126065.564
6	806913.614	2126190.8.93
7	806566.550	2126316.223
8	806219.486	2126441.553
9	809071.940	2126155734
10	808713.589	2126285.140
11	808355.238	2126414.545
12	807996.888	2126543.951
13	807638.537	2126673.356
14	807280.186	2126802.762
15	806921.836	2126932.167
16	806563.488	2127061.572
17	809525.273	2126736.272
18	809200.783	2126853.450
19	808876.292	2126970.628
20	808551.801	2127087.807
21	808227.310	2127204.985
22	807902.820	2127322.163
23	807578.329	2127439.341
24	807253.806	2127556.531
25	809795.166	2127135.935





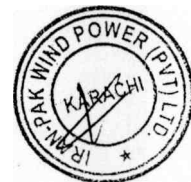
4.8 GRID CONNECTIVITY :

Iran-Pak Wind Power Plant would be connected by a double circuit of 132 kV looping in-out with a sub cluster connecting neighboring Wind Power Plants of Uni-Energy 50 MW and Artistic 50 MW and the other 5 WPPs in the first loop with Jhimpir-2 220/132 kV collector substation. It should be noted that the length of circuits used for the simulations are confirmed from site visit and agreed with NTDC officials. They may change slightly during the implementation of the project. In addition, the connectivity of Iran-Pak WPP with neighboring wind power plants may change, depending upon the COD of the project.

4.9 ANNUAL ENERGY PRODUCTION :

Annual Production of 164.775 Gwh has been estimated for the project. The table below shows details related to power generation :

<u>ENER MODDATION, ZA7:::</u>	
Total installed Gross ISO Capacity of the Generation Facility — MW	50 MW
<u>Annual Energy Production</u>	<u>164.775 Gwh</u>
Net Capacity Factor	38 %



5. EPC- Process & Selection:

5.1 WTG TECHNOLOGY & EPC SELECTION :

After the issuance of LOT the Project Company carried out a competitive bidding process in order to select WTG and EPC for the Project by circulating RFPs to the EPC contractors as well as WTG manufacturers for awarding the turnkey EPC contracts for the development of the Project. For this purpose an RFP was issued to following on 15th March 2016.

1. Vestas Denmark
2. HydroChina Corporation
3. Nordex Germany
4. Orient Pakistan
5. Shanghai Electric China
6. XEPCC China

Bid clarification meetings were held with the bidders. Last date for submission of bids was 15th April 2016. Two envelopes bidding procedure was adopted whereby technical and financial bids were submitted in two separate envelopes.

Based on technical and financial evaluation, Vestas Denmark / XEPCC China were declared as the first preferred bidder for the Vestas WTG and Hydro China Corporation was declared as the second preferred bidder for both the Vestas and Siemens Gamesa WTG.

The Company had carried out the EPC process for opting the upfront tariff in June 2016. Prior to June the EPC contracting process had been completed. However; the upfront tariff was not awarded to the company.

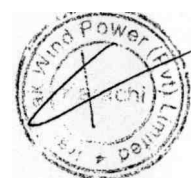
Since the submission for award of upfront tariff and decision of NEPRA ; the selected Vestas WTG had been discontinued. Accordingly the company after negotiations signed the EPC contract with the second preferred bidder for the Siemens Gamesa G114- 2.0 MW WTG.

5.2 SIEMENS-GAMESA—THE WTG MANUFACTURER :

With 20 years' experience, Gamesa is a global leader in the design, manufacture, installation and maintenance of wind turbines, with over 28,800 MW installed in 43 countries across five continents.

Operation & Maintenance (O&M) is one of the key activities upon which Gamesa bases its development, having 70% of its fleet under an Operation & Maintenance contract thanks to an expansion of this activity in over 30 countries.

In April 2017, Siemens merged its wind power business with Gamesa. Siemens Wind Power and Gamesa now form a world-leading wind power provider in the name of "Siemens Gamesa Renewable Energy", with an 14 unrivalled global presence with over 75 GW installed globally in more than 90 countries. The two companies complement one another almost perfectly and boast a unique product portfolio.



The Project comprises of 25 Siemens-Gamesa G114-2.0 MW CHA Wind Turbines at 93m hub height. The output of the farm will be 50 MW with capacity factor of 38%. The Project construction timeline will be 18 months after issuance of Notice to Proceed (NTP).

The specifications of Siemens-Gamesa's G114-2.0 turbine are as follows:

5.3 WTG SPECIFICATIONS :

Description	Specs.
Wind Turbine Type, Make & Model	G114-2.0
Installed Capacity of Wind Farm (MW)	50 MW
Number of Wind Turbine Units/Size of each Unit (KW)	25 x 2.0 MW
Number of blades	3
Rotor diameter	114m
Hub Height	93
Generator Voltage	690 V
Cut-in wind speed	3 m/s
Cut-out wind speed	25 m/s
Extreme wind speed	56 m/s

5.4 THE EPC CONTRACTOR —HYDRO CHINA CORPORATION:

Hydro China Corporation, is part of Power China group one of the largest groups in China with total revenue of approx. US\$ 50 billion and total assets of over US\$ 77 billion. Power China has performed more than 1900 Projects in 116 countries.

The company provides technical services in the field of hydropower, water resources development and wind power development in China, including planning of river basins, reconnaissance, design, consultancy, construction supervision, appraisal, evaluation, safety appraisal, check and acceptance, construction, project management and EPC contracting for hydropower and new energy development, investment, operation and management of hydropower and new energy projects as well. The company was founded in 2002 and is headquartered in Beijing, China.

In Pakistan Hydro China Corporation has already conducted EPC works since 2011 and has completed EPC contracts for 280 MWs and is executing EPC contracts for another 300 MWs.



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 110.

A summary of the Project Cost is given below:

EPC Cost	78,901
Project Development Cost	3,515
Insurance during Construction	512,856
Financial Fee and Charges	1,862
Interest during Construction	3,866
Total Project Cost	88,657

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; 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 \$ 78.901 Million. As identified above, IPWPPL adopted an effective and efficient bidding process for procuring the services of EPC Contractor at the most competitive prices. Bidding process allows each bidder to submit its own project layout and design, based on the project topography, geology, and other basic information combined with site visits, so as to provide the most optimized and effective technical scheme for construction and implementation of the project. The bidders submitted different technical schemes and the most robust and cost effective solution was selected through the bidding process. IPWPPL believes that the price as contracted with the EPC Contractor is reasonable under the prevailing market conditions.

Project	78,901
EPC Cost - On shore	19,449
EPC Cost - Off Shore	59,452

6.2 PROJECT DEVELOPMENT COST:

This head includes the cost for development of Project and land and includes all costs, fees and expenses incurred or to be incurred for such purpose. A total of US\$ 3.515 million has been estimated 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, design study , electrical study and Transportation study etc.



- Costs related to the performance guarantee to be furnished to EDGOS/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.
- Travelling costs of Project Company staff.
- Cost of security arrangement for the Project.
- Costs relating to various permits for the Project.
- Costs relating to Project advisors, including cost of Local and Foreign Advisors, Legal Advisors, Insurance Advisor, Audit and Tax Advisors, Security Advisors, Carbon Credit Advisors etc and their travelling costs related to financial close.
- NTDC/EPA related Factory Acceptance Tests (FATs) costs.

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 for 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 US \$ 0.512 Million 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:

- (a) Construction All Risk Insurances (CAR)
- (b) CAR Delay in Start-up Insurance
- (c) Terrorism Insurance
- (d) Marine and Inland Transit Insurance
- (e) Marine - Delay-In Startup Insurances
- (f) 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, LC 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. US \$ 1.862 Million 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, long gestation period of the project and prevailing circular debt issue, higher financing cost is required to be incurred for obtaining financing for the project.

6.6 INTEREST DURING CONSTRUCTION :

The Interest during Construction ("IDC") has been calculated on the basis of 18 months construction period at US \$ 3.866 Million on terms prevailing at 3-month KIBOR (6%) plus a spread of 2.5% for local financing and at 3-month LIBOR (0.6%) plus a spread of 4.25% for foreign financing. 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 18 months, which is in line with the construction period agreed with the EPC Contractors.

It is prayed that NEPRA kindly allow adjustment of same at the time of tariff true - up at COD..

The spreads are considered to be reasonable given:

- Tenure of the Loan repayment is 13 years.
- Pakistan's balance of payment situation has deteriorated significantly during the past year which may cause a lowering of our Credit Rating.

"IDC, at this stage, is an estimated figure, which is adjustable at COD, based in actual LIBOR, actual KIBOR, timing and amount of loans drawdown, changes in Taxes and Duties and variations in PKR/USD exchange rate during the Project construction period after financial close, therefore it is prayed that NEPRA kindly allow adjustment for the same at the time of tariff true-up at COD."

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 15% (IRR based) return on invested equity net of withholding tax
- ROEDC at a rate of 15% over the remaining life of the Project

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 ROEDC at actual as a pass-through item under the tariff.



7. Financing Arrangement :

7.1 PROJECT FINANCING:

The Project Cost is envisaged to be funded on the basis of a Debt: Equity ratio of 75:25, 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 75:25 has been assumed, thereby resulting in the following debt and equity injections for the Project:

oPeAeler

DESCRIPTION	Million US \$
Debt	66.49
Equity	22.16
Total Project Cost	88.65

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

Description	Local Financing	Foreign Financing
Base Rate	3 M kibor (6%)	3 M Libor (0.6%)
Spread	2.5%	4.25%
Total Rate	8.5%	4.85%
Repayment period	13 years	13 years
Repayment basis	Quarterly	Quarterly

The Project Company will actively pursue the option of State Bank of Pakistan lending facility for Renewable Energy projects. If the Project Company is successful in attaining the facility, then at true-up of the awarded tariff, relevant tariff components shall be adjusted accordingly. However this will be firmed up near the time of financial close and intimated to Authority as soon as it is finalized.

Sponsors are planning to inject 25% equity into the Project. The financing structure of 75:25 debt equity might change later based on mutual arrangement between Banks and Sponsors.

7.2 CARBON CREDITS:

Wind Power is a clean form of energy and will reduce CO₂ emission. IPWPPL intends to register for CDM emission reduction program. In case any income is generated from CDM, the same shall be shared in accordance to GoPs 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. Break-up of the same is provided hereunder:

Operations Cost Breakdown	
Total O&M Cost	US \$ 1.90 Million /Annum
Total Insurance Cost	US \$ 0.394 Million / Annum

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 cost expected to be incurred by the project locally. These costs are associated with local staff, administrative expense, cooperate fees, audit fees , advisory fees etc.

This component also includes costs associated with replacement of parts necessitated due to regular operation/normal wear and tear. IPWPPL has requested that an annual O&M contracted cost of USD 1.9M per annum be allowed.

The O&M cost will be incurred in local as well as foreign currency - percentage of local and foreign components are specified below along with the indexation applicable on O&M cost:

O&M Cost		
Description	Percentage	Indexation
Local	25%	Pakistan CPI (General)
Foreign	75%	US CPI (All Urban Consumers) PKR / USD indexation



8.2 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.

IPWPPL has requested that an annual insurance cost at a rate of 0.5 % of the EPC i.e US \$ 0.394 per annum be allowed.



9. Reference Tariff:

As the Project is 75 % debt funded with loan tenure of 13 years for repayment, 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 two (02) bands i.e. year 1 — 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:

Wetettiaft f			h	
Description			Year 1-13	Year 14-25
1	O&M		1.21074	1.21074
2	INSURANCE		0.25139	0.25139
3	ROE		2.11856	2.11856
4	ROEDC		0.30070	0.30070
5	DEBT SERVICING	Local	2.49671	-
		Foreign	3.05140	-
	TOTAL		9.4295	3.8814



9.1 REFERENCE GENERATION TARIFF :

Year	O&M	Insurance	ROE	ROEDC	Foreign Loan		Local Financing		TARIFF	
					Principal	Markup	Principal	Markup		
	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs. MI' h	US Cents/ kWh
1	1.21074	0.25139	2.11856	0.30070	1.66040	1.39099	0.86361	1.63310	9.4295	8.5723
2	1.21074	0.25139	2.11856	0.30070	1.74241	1.30899	0.93939	1.55732	9.4295	8.5723
3	1.21074	0.25139	2.11856	0.30070	1.82847	1.22293	1.02182	1.47489	9.4295	8.5723
4	1.21074	0.25139	2.11856	0.30070	1.91877	1.13263	1.11149	1.38523	9.4295	8.5723
5	1.21074	0.25139	2.11856	0.30070	2.01354	1.03786	1.20902	1.28770	9.4295	8.5723
6	1.21074	0.25139	2.11856	0.30070	2.11299	0.93841	1.31511	1.18161	9.4295	8.5723
7	1.21074	0.25139	2.11856	0.30070	2.21735	0.83405	1.43050	1.06621	9.4295	8.5723
8	1.21074	0.25139	2.11856	0.30070	2.32686	0.72454	1.55603	0.94069	9.4295	8.5723
9	1.21074	0.25139	2.11856	0.30070	2.44178	0.60962	1.69257	0.80415	9.4295	8.5723
10	1.21074	0.25139	2.11856	0.30070	2.56238	0.48902	1.84109	0.65563	9.4295	8.5723
11	1.21074	0.25139	2.11856	0.30070	2.68893	0.36247	2.00264	0.49408	9.4295	8.5723
12	1.21074	0.25139	2.11856	0.30070	2.82174	0.22966	2.17836	0.31835	9.4295	8.5723
13	1.21074	0.25139	2.11856	0.30070	2.96110	0.09030	2.36951	0.12720	9.4295	8.5723
14	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
15	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
16	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
17	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
18	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
19	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
20	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
21	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
22	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
23	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
24	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
25	1.21074	0.25139	2.11856	0.30070	-	-	-	-	3.8814	3.5285
Levelized Tariff									8.22314	7.47558





9.2 REFERENCE DEBT SERVICING SCHEDULE- LOCAL FINANCING :

Repayment Period	Principal Repayment US \$	Principal Tariff Component (Rs/kwh)	Interest US\$	Interest Tariff Component (Rs/kwh)	Installment US \$	Installment Tariff Component (Rs/kwh)
1	284,805	0.18149	565,188	0.36016	849,994	0.54164
2	290,857	0.18534	559,136	0.35630	849,994	0.54164
3	297,038	0.18928	552,956	0.35236	849,994	0.54164
4	303,350	0.19330	546,644	0.34834	849,994	0.54164
5	309,796	0.19741	540,197	0.34423	849,994	0.54164
6	316,380	0.20161	533,614	0.34004	849,994	0.54164
7	323,103	0.20589	526,891	0.33575	849,994	0.54164
8	329,969	0.21027	520,025	0.33138	849,994	0.54164
9	336,980	0.21473	513,013	0.32691	849,994	0.54164
10	344,141	0.21930	505,852	0.32235	849,994	0.54164
11	351,454	0.22396	498,539	0.31769	849,994	0.54164
12	358,923	0.22872	491,071	0.31293	849,994	0.54164
13	366,550	0.23358	483,444	0.30807	849,994	0.54164
14	374,339	0.23854	475,655	0.30310	849,994	0.54164
15	382,294	0.24361	467,700	0.29803	849,994	0.54164
16	390,417	0.24879	459,576	0.29286	849,994	0.54164
17	398,714	0.25407	451,280	0.28757	849,994	0.54164
18	407,186	0.25947	442,807	0.28217	849,994	0.54164
19	415,839	0.26499	434,155	0.27666	849,994	0.54164
20	424,676	0.27062	425,318	0.27103	849,994	0.54164
21	433,700	0.27637	416,294	0.26528	849,994	0.54164
22	442,916	0.28224	407,078	0.25940	849,994	0.54164
23	452,328	0.28824	397,666	0.25340	849,994	0.54164
24	461,940	0.29436	388,054	0.24728	849,994	0.54164
25	471,756	0.30062	378,237	0.24102	849,994	0.54164
26	481,781	0.30701	368,213	0.23464	849,994	0.54164
27	492,019	0.31353	357,975	0.22811	849,994	0.54164
28	502,474	0.32019	347,519	0.22145	849,994	0.54164
29	513,152	0.32700	336,842	0.21465	849,994	0.54164
30	524,057	0.33395	325,937	0.20770	849,994	0.54164
31	535,193	0.34104	314,801	0.20060	849,994	0.54164
32	546,566	0.34829	303,428	0.19335	849,994	0.54164
33	558,180	0.35569	291,814	0.18595	849,994	0.54164
34	570,041	0.36325	279,952	0.17839	849,994	0.54164
35	582,155	0.37097	267,839	0.17068	849,994	0.54164
36	594,526	0.37885	255,468	0.16279	849,994	0.54164
37	607,159	0.38690	242,834	0.15474	849,994	0.54164
38	620,061	0.39512	229,932	0.14652	849,994	0.54164
39	633,238	0.40352	216,756	0.13812	849,994	0.54164
40	646,694	0.41209	203,300	0.12955	849,994	0.54164
41	660,436	0.42085	189,558	0.12079	849,994	0.54164
42	674,470	0.42979	175,523	0.11185	849,994	0.54164
43	688,803	0.43893	161,191	0.10272	849,994	0.54164
44	703,440	0.44825	146,554	0.09339	849,994	0.54164
45	718,388	0.45778	131,606	0.08386	849,994	0.54164
46	733,654	0.46751	116,340	0.07414	849,994	0.54164
47	749,244	0.47744	100,750	0.06420	849,994	0.54164
48	765,165	0.48759	84,828	0.05406	849,994	0.54164
49	781,425	0.49795	68,568	0.04369	849,994	0.54164
50	798,031	0.50853	51,963	0.03311	849,994	0.54164
51	814,989	0.51934	35,005	0.02231	849,994	0.54164
52	832,307	0.53037	17,687	0.01127	849,994	0.54164



9.3 REFERENCE DEBT SERVICING SCHEDULE- FOREIGN FINANCING :

Repayment Period	Principal Repayment US \$	Principal Tariff Component (Rs/kwh)	Interest US \$	Interest Tariff Component (Rs/kwh)	Installment US \$	Installment Tariff Component (Rs/kwh)
1	555,098	0.35373	483,735	0.30825	1,038,833	0.66198
2	561,829	0.35801	477,004	0.30396	1,038,833	0.66198
3	568,641	0.36236	470,192	0.29962	1,038,833	0.66198
4	575,536	0.36675	463,297	0.29523	1,038,833	0.66198
5	582,514	0.37120	456,319	0.29078	1,038,833	0.66198
6	589,577	0.37570	449,256	0.28628	1,038,833	0.66198
7	596,726	0.38025	442,107	0.28172	1,038,833	0.66198
8	603,961	0.38486	434,872	0.27711	1,038,833	0.66198
9	611,284	0.38953	427,549	0.27245	1,038,833	0.66198
10	618,696	0.39425	420,137	0.26772	1,038,833	0.66198
11	626,197	0.39903	412,635	0.26294	1,038,833	0.66198
12	633,790	0.40387	405,043	0.25811	1,038,833	0.66198
13	641,475	0.40877	397,358	0.25321	1,038,833	0.66198
14	649,253	0.41372	389,580	0.24825	1,038,833	0.66198
15	657,125	0.41874	381,708	0.24324	1,038,833	0.66198
16	665,093	0.42382	373,740	0.23816	1,038,833	0.66198
17	673,157	0.42896	365,676	0.23302	1,038,833	0.66198
18	681,319	0.43416	357,514	0.22782	1,038,833	0.66198
19	689,580	0.43942	349,253	0.22256	1,038,833	0.66198
20	697,941	0.44475	340,892	0.21723	1,038,833	0.66198
21	706,404	0.45014	332,429	0.21183	1,038,833	0.66198
22	714,969	0.45560	323,864	0.20638	1,038,833	0.66198
23	723,638	0.46112	315,195	0.20085	1,038,833	0.66198
24	732,412	0.46672	306,421	0.19526	1,038,833	0.66198
25	741,292	0.47237	297,541	0.18960	1,038,833	0.66198
26	750,280	0.47810	288,553	0.18387	1,038,833	0.66198
27	759,378	0.48390	279,455	0.17808	1,038,833	0.66198
28	768,585	0.48977	270,248	0.17221	1,038,833	0.66198
29	777,904	0.49570	260,929	0.16627	1,038,833	0.66198
30	787,336	0.50172	251,497	0.16026	1,038,833	0.66198
31	796,883	0.50780	241,950	0.15418	1,038,833	0.66198
32	806,545	0.51396	232,288	0.14802	1,038,833	0.66198
33	816,324	0.52019	222,509	0.14179	1,038,833	0.66198
34	826,222	0.52649	212,611	0.13548	1,038,833	0.66198
35	836,240	0.53288	202,593	0.12910	1,038,833	0.66198
36	846,379	0.53934	192,453	0.12264	1,038,833	0.66198
37	856,642	0.54588	182,191	0.11610	1,038,833	0.66198
38	867,029	0.55250	171,804	0.10948	1,038,833	0.66198
39	877,541	0.55920	161,292	0.10278	1,038,833	0.66198
40	888,182	0.56598	150,651	0.09600	1,038,833	0.66198
41	898,951	0.57284	139,882	0.08914	1,038,833	0.66198
42	909,851	0.57979	128,982	0.08219	1,038,833	0.66198
43	920,882	0.58682	117,951	0.07516	1,038,833	0.66198
44	932,048	0.59393	106,785	0.06805	1,038,833	0.66198
45	943,349	0.60113	95,484	0.06085	1,038,833	0.66198
46	954,787	0.60842	84,046	0.05356	1,038,833	0.66198
47	966,364	0.61580	72,469	0.04618	1,038,833	0.66198
48	978,081	0.62326	60,752	0.03871	1,038,833	0.66198
49	989,941	0.63082	48,892	0.03116	1,038,833	0.66198
50	1,001,944	0.63847	36,889	0.02351	1,038,833	0.66198
51	1,014,092	0.64621	24,741	0.01577	1,038,833	0.66198
52	1,026,388	0.65405	12,445	0.00793	1,038,833	0.66198





10. Indexation & 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:

(a) the USD/PKR exchange rate, based on the revised IT & OD selling rate of USD as notified by the National Bank of Pakistan; and

(b) US CPI (for all Urban-consumer), as issued by the US Bureau of Labor Statistics.

The applicable formula shall be as follows:

$O\&M(FRev) = \frac{\text{Relevant Reference Generation Tariff Component}^*}{(US\ CPI)_{Reo} / (US\ CPI)_{Ren} (FX\ USD(Rev))^* (FX\ USD(Reo))}$
--

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
$US\ CPI_{Reo} =$	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 110 for USD 1.

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:



$O\&M(LRev) = \frac{\text{Relevant Reference Generation Tariff Component} *}{(CPI(Rev) / CPI(aeo))}$
--

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:

$\text{Insurance}(k_e) = \frac{\text{Relevant Reference Generation Tariff Component}}{(FX \text{ USD}(Rev) / FX \text{ USD}(Ref))}$

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 110 for USD 1.

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:

ROE(Rev)	$\frac{\text{Relevant Reference Generation Tariff Component}^*}{(\text{FX}_{\text{USD(Rev)}} / \text{FX}_{\text{USD(Ref)}})}$
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ROEDC(Rev) =	$\frac{\text{Relevant Reference Generation Tariff Component}^*}{(\text{FX}_{\text{USD(Rev)}} / \text{FX}_{\text{USD(Ref)}})}$
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Where:

ROE(R _{e0}) =	the revised ROE component applicable for the relevant quarter
ROE-DC(R _{e0}) =	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(R _{e0}) =	TT & OD selling rate of PKR/USD of PKR 110 USD 1

10.1.5 DEBT COMPONENT :

a) Local Financing :The principal and interest component of local financing will remain unchanged throughout the term except for the adjustment due to variation in 3 months KIBOR. while spread of 2.5% on KIBOR remaining the same, according to the following formula:

<u>I 41</u> =	$P(\text{Rev}) * (\text{KIBOR}(\text{Rev}) - 6\%) / 4$
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Where:

AI =	the variation in interest charges applicable corresponding to variation in 3 month KIBOR. AI can be positive or negative depending upon whether KIBOR(Rev) > or < 6%. The interest payment obligation will be enhanced or reduced to the extent of 6,1 for each period under adjustment applicable on bi-annual basis.
P(Rev) =	the outstanding principal on a quarterly basis at the relevant calculation dates.

b) Foreign Financing : The principal and interest component of foreign financing will remain unchanged except for the adjustment due to variation in 3 month LIBOR , while spread of 4.25% on LIBOR remaining the same according to the following formula.

<u>AI</u> =	$P(\text{Rev}) * (\text{LIBOR}(\text{Rev}) - 0.6\%) / 4$
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Where:

AI =	the variation in interest charges applicable corresponding to variation in 3 month LIBOR. AI can be positive or negative depending upon whether LIBOR(Rev) > or < 0.6%. The interest payment obligation will be enhanced or reduced to the extent of AI for each period under adjustment applicable on bi-annual basis.
P(Rev) =	the outstanding principal on a quarterly basis at the relevant calculation dates.

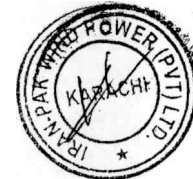
10.2 ADJUSTMENTS:

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

- (a) The Principal Repayment and cost of debt be adjusted at COD as per the actual borrowing composition;
- (b) Interest During Construction be adjusted as per actual based on actual disbursement of loans and prevailing KIBOR rates during the project construction period;
- (c) 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.
- (d) Customs duty and other taxes (including SIDS) be adjusted/allowed as per actual;
- (e) 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.
- (f) Pre-COD Insurance Cost be adjusted at actual subject to a cap of 1% of the EPC cost in line with earlier tariff determinations by NEPRA for other IPPs.
- (g) Return on Equity be adjusted at COD in order to ensure an IRR based return of 15% on equity (while treating the project as a Build-Own-Operate type project).
- (h) ROEDC is to be allowed at the time of COD, as true-up adjustment, based on actual equity injections to the IPWPPL by the Project Sponsors.

10.3 NON - PROJECT MISSED VOL (NPMV) :

The Petitioner expects that the Non-Project Missed Volume (NPMV) shall be paid by CPPA on the basis of actual generation missed by the Project Company due to the occurrence of a non-project event (NPE). Given the sophisticated SCADA systems and forecasting tools (as also specified under the Grid Code Addendum No. 1 (Revision 1) now available, missed generation can be accurately determined without human intervention; therefore, the same should be compensated at actual - we believe that the aforementioned mechanism is the only fair method which ensures neither party (Project Company or Power Purchaser) are unduly burdened / penalized due to occurrence of the NPE. If such a practical solution is not workable, then firstly, the requirement for having forecasting tools should be removed from the Grid Code Addendum No. 1



(Revision 1), secondly, the Petitioner requests to go with the precedent mechanism of NPMV compensations (as reflected in the previously available tariff determinations and previously executed EPAs).

It is worth highlighting that the Grid Code Addendum No. 1 (Revision 1) provides for levy of penalties on wind IPPs for not remaining within the forecast error thresholds, therefore, while the wind IPPs are now obligated to maintain compliance with such stringent standards for forecasting, the same method for determining projected energy yield should be used for compensating the wind IPPs during the occurrence of a NPE.

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 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 :

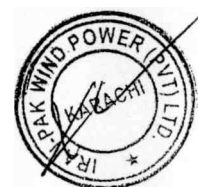
Authority is requested to allow following cost components as pass-through to IPWPPL on the basis of actual costs incurred by Project Company or obligated to be paid in relation to the Project pursuant to Laws of Pakistan.

- a) No provision of income tax has been provided for 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.
- b) 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.
- c) 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.
- d) Zakat deduction on dividends as required under Zakat Ordinance is considered as a pass through;
- e) No tax on income of IPWPPL (including proceeds against sale of electricity to CPPA) has been assumed. Corporate tax, turnover 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;
- f) Taxes and Custom duties on the import of plant and equipment under RE Policy including SIDC;
- g) 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;
- h) 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.
- i) 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:

- a) Debt for the Project will be sourced from local and foreign financial institutions. 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;



- b) An exchange rate of PKR 110 /USD 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:
- c) 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;
- d) Similarly, adjustments in Project Cost due to variation in PKR / USD variations and KIBOR fluctuations will also be catered for at the time of COD;
- e) Taxes and custom duties shall be claimed on actual at the time of COD tariff adjustment.
- f) Withholding tax at 8% on supplies and Onshore Contract which is the base date stipulated in Bidding document pursuant to the Onshore Contract have been catered for under the Project Cost. 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;
- g) 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;
- h) 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.
- i) 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.
- j) 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.
- k) Any additional indexation or concession allowed by the GOP, NEPRA or any other Govt entity to any IPP will be allowed to IPWPPL without any discrimination.

11/11/2011
E.A.U. KARACHI

Iran Pak Win

Dated : 20th) 111 er0B

