MASTER
SINCE 1963

MASTER
MASTER WIND ENERGY LTD.

82-C-1, Gulberg-III,
Lahore, Pakistan.

Tel: (92-42) 5752620-2 (3Lines)
(92-42) 5758524-6 (3Lines)
Fax: (92-42) 5750895 - 5751905
UAN (042-III-666-555)
E-mail: info@master.com.pk.

Date: September 23, 2011

Ref: TP01/MWEL/11

THE REGISTRAR
NATIONAL ELECTRICAL POWER REGULATORY AUTHORITY (NEPRA)
OPF Building, Shaharah-e-Jamhuriat,
G-5/2,
Islamabad.

SUBJECT: **TARIFF PETITION FOR MASTER WIND ENERGY LIMITED'S 49.5 MW WIND POWER PROJECT AT JHIMPIR, DISTRICT THATTA, PROVINCE OF SINDH**

Dear Sir,

1. It is submitted that the wind power generation program in Pakistan was initiated by the Government of Pakistan by installation of wind measuring stations in the coastal areas of Sindh, Pakistan. The energy potential of 346,000 MW in the country is estimated by National Renewable Energy Laboratory, USA and only the Gharo – Keti Bander – Hyderabad wind corridor has a potential of 43,000 MW of wind power generation.

2. In view of the Government of Pakistan's initiative to enhance the power generation in the country through renewable resources, MASTER WIND ENERGY LIMITED was issued a Letter of Intent by the Alternative Energy Development Board (the **AEDB**) on January 26, 2005 to develop and establish a 50 MW wind farm. Following introduction of the Policy for Development of Renewable Energy for Power Generation 2006 (the **RE Policy 2006**), Master Wind Energy Limited was issued another Letter of Intent by AEDB on December 20, 2006 for an approximately 50MW wind power generation project to be located at Gharo – Keti Bandar Corridor, District Thatta, Province of Sindh. The requisite bank guarantee for an amount equal to USD 250,000 was submitted to AEDB on March 09, 2011 by Master Wind Energy Limited.

3. Master Wind Energy Limited completed the detailed feasibility study for its project and submitted the same to AEDB for its approval (the **Project Feasibility Study**). Following its review of the Project Feasibility Study, AEDB (vide its letter dated August 27, 2011 (Ref: B/3/1/MWEL/07) (the **Feasibility Study Approval Letter**)) granted its conditional approval to the Project Feasibility Study relating to Master Wind Energy Limited's 49.5 MW wind power project to be located at Jhimpir, District Thatta, Province of Sindh and instructed Master Wind Energy Limited to proceed with its application to NEPRA for tariff.

4. **THUS, PURSUANT TO** the relevant provisions of the NEPRA (Tariff Standards and Procedure) Rules, 1998, read with the provisions of the Regulation for Generation, Transmission and

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Distribution of Electric Power Act (XL of) 1997 and the Rules and Regulations made thereunder; AND in accordance with the RE Policy 2006 and the Guidelines for Determination of Tariff for Wind Power Generation 2006; AND in view of compliance by Master Wind Energy Limited of the RE Policy 2006 in respect of meeting the requirements of the same so as to be eligible for application for a tariff (as interpreted in light of the Feasibility Study Approval Letter): MASTER WIND ENERGY LIMITED SUBMITS before NEPRA, the competent regulatory authority lawfully authorized to determine tariff for wind power generation companies, for its approval, its tariff petition (the **Tariff Petition**) for approval of: (i) the Reference Generation Tariff; (ii) the energy production estimates; (iii) the Benchmark Energy Table and Monthly Complex Power Curves; (iv) the Indexations and Adjustments; (vi) Adjustments at commercial operations date; (vii) Correction Factor and (viii) other matters set out in the Tariff Petition, in each case, for Master Wind Energy Limited's 49.5 MW power generation facility to be located at Jhimpir, District Thatta, Province of Sindh.

5. The Tariff Petition (including its Annexures) is submitted in triplicate, together with:

   (a) the Bank Draft No. DDH 1805234 dated 29 August, 2011 amounting to PKR 440,864/- (Pakistani Rupees Four Hundred Forty Thousand Eight Hundred and Sixty Four) as requisite fee for the Tariff Petition, as communicated by NEPRA;

   (b) Board resolution of Master Wind Energy Limited; and

   (c) Affidavits of Mr. Naveed Malik and Mr. Nauman Mirza.

In light of the submissions, the financial analysis and information contained in the Tariff Petition, along with the annexures attached hereto, and in the national interest of expediting Master Wind Energy Limited's wind power generation facility's establishment process under the auspices of Government of Pakistan and its commitment to developing a renewable energy based generation capacity in Pakistan, the Tariff Petition is submitted for NEPRA's approval of the Reference Generation Tariff.

Respectfully submitted for and on behalf of:
MASTER WIND ENERGY LIMITED

MASTER WIND ENERGY LTD.

.....

MR. NAUMAN MIRZA
CHIEF FINANCIAL OFFICER OF MASTER
WIND ENERGY LIMITED

BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (NEPRA)

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 REGULATIONS MADE THEREUNDER
&
THE FEDERAL GOVERNMENT'S
'POLICY OF RENEWABLE ENERGY FOR POWER GENERATION 2006'
AND THE
"GUIDELINES FOR DETERMINATION OF TARIFF FOR WIND POWER GENERATION 2006"

ON BEHALF OF

MASTER WIND ENERGY LIMITED

FOR NEPRA'S APPROVAL OF REFERENCE GENERATION TARIFF FOR
MASTER WIND ENERGY LIMITED

FOR A POWER PROJECT OF 49.5 MW

AT

JHIMPIR, DISTRICT THATTA, PROVINCE OF SINDH, PAKISTAN

DATED: SEPTEMBER 23, 2011

MASTER WIND ENERGY LIMITED
ADDRESS : MASTER HOUSE, 54-DARULAMAN C.S., MAIN SHAHRAH-E-FAISAL, KARACHI, SINDH, PAKISTAN
PHONE # : 92-213-4531068
FAX # : 92-213-4541974

COPY OF MASTER WIND ENERGY LIMITED'S BOARD RESOLUTION

MASTER WIND ENERGY LTD.

82-C-1, Gulberg-III,
Lahore, Pakistan.

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EXTRACT OF THE MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS OF MASTER WIND ENERGY LIMITED HELD AT 11:00 AM AT 82-C/I, GULBERG-III, LAHORE

BOARD RESOLUTIONS:

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

"RESOLVED THAT MASTER WIND ENERGY LIMITED (a company incorporated under the laws of Pakistan with its registered office located at Master House, 54 Darul Aman Co-operative Housing Society, Shahrah-e-Faisal, Karachi, Pakistan) (the **Company**) be and is hereby authorised to file a tariff petition (including any review petitions and any motion for leave for review) for submission to National Electric Power Regulatory Authority for determination of the reference generation tariff in respect of its 49.5 MW wind power generation project to be located at Jhimpir, 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 a tariff petition (including any review petitions and any motion for leave for review) for submission to National Electric Power Regulatory Authority, **MR. NAVEED MALIK AS DIRECTOR AND MR. NAUMAN MIRZA AS CHIEF FINANCIAL OFFICER** be and are hereby singly and jointly empowered and authorized for and on behalf of the Company to:

(i) review, execute, submit, and deliver the tariff petition (including any review petitions and any motion for leave for review) and any related documentation required by National Electric Power Regulatory Authority for the determination of the reference generation tariff, 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 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);

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MASTER WIND ENERGY LTD.

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(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 tariff petition (including any review petitions and any motion for leave for review) and procuring National Electric Power Regulatory Authority's tariff determination;

(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 make communicate with, make presentations to and attend the National Electric Power Regulatory Authority 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".

"AND FURTHER RESOLVED THAT MR. NAVEED MALIK AS DIRECTOR, be and is hereby 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."

MASTER WIND ENERGY LTD.

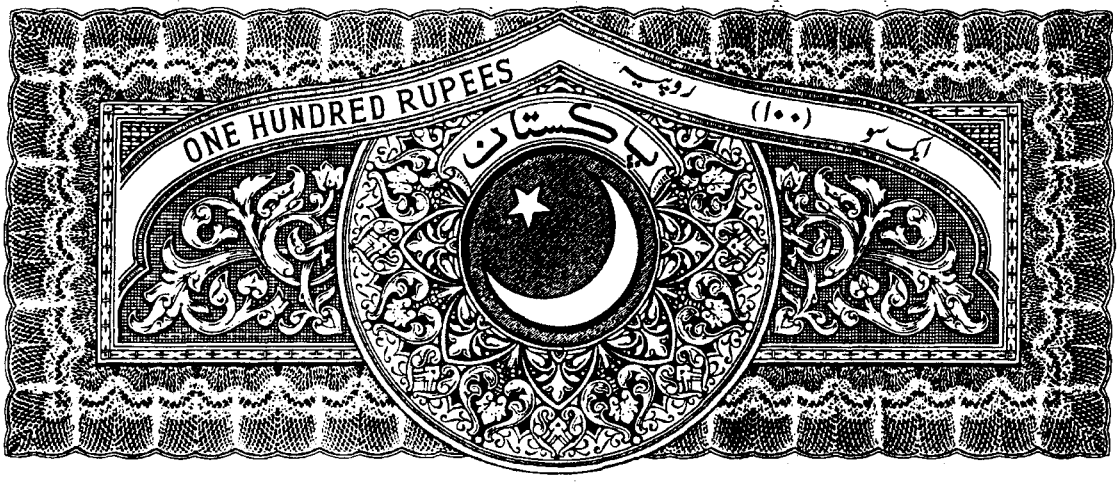
.....

MR. NAVEED MALIK
Chairman of Board of Master Wind Energy Limited

CERTIFIED TRUE COPY
MASTER WIND ENERGY LTD

COPY OF AFFIDAVITS OF AUTHORIZED REPRESENTATIVES

PAKISTAN 100 RS.



BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT

AFFIDAVIT of MR. NAVEED MALIK, authorized representative of M/s MASTER WIND ENERGY LIMITED, 82-C-1, Gulberg III, Lahore, Pakistan.

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

1. I am the Chairman of M/s MASTER WIND ENERGY LIMITED, 82-C-1, Gulberg III, Lahore, Pakistan.

2. I am the authorized representative of M/s MASTER WIND ENERGY LIMITED, 82-C-1, Gulberg III, Lahore, Pakistan.

3. The contents of the accompanying Tariff Petition dated 23 September, 2011, including all supporting documents are true and correct to the best of my knowledge and belief, and nothing material or relevant thereto has been concealed or withheld therefrom.

4. I also affirm that all further documentation and information to be provided by me in connection with the aforesaid Tariff Petition shall be true and correct to the best of my knowledge and belief.

.....
DEPONENT

VERIFICATION

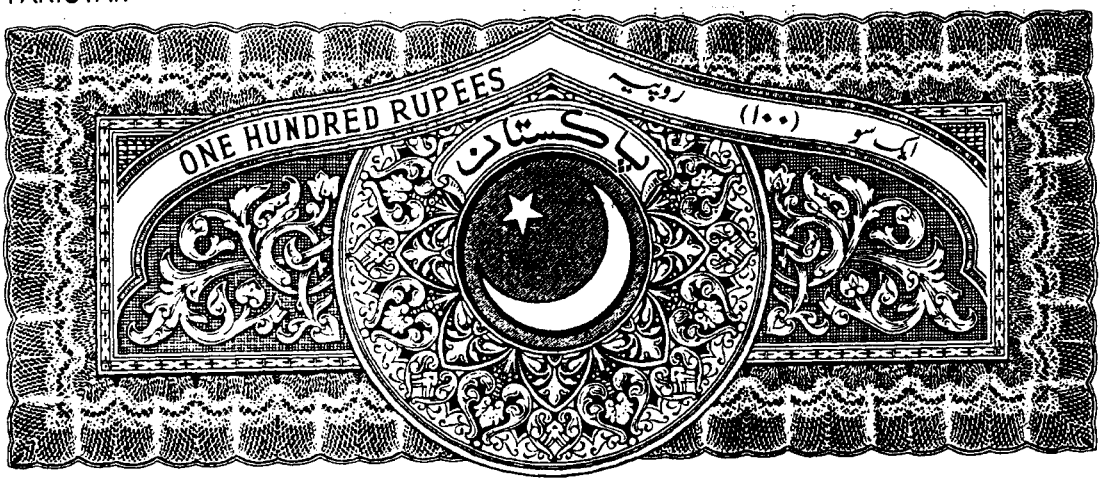
It is hereby verified on solemn affirmation at Lahore, Pakistan on this 23rd day of September, 2011, that the contents of the above Affidavit are true and correct to the best of my knowledge and belief, and that nothing material or relevant thereto has been concealed or withheld therefrom.

CERTIFIED TRUE COPY
MASTER WIND ENERGY LTD

.....
DEPONENT

ATTESTED

PAKISTAN 100 RS.



BEFORE
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

AFFIDAVIT

AFFIDAVIT of **MR. MUHAMMAD NAUMAN MIRZA**, authorized representative of M/s MASTER WIND ENERGY LIMITED, 82-C-1, Gulberg III, Lahore, Pakistan.

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

1. I am the Chief Financial Officer of M/s MASTER WIND ENERGY LIMITED, 82-C-1, Gulberg III, Lahore, Pakistan.

2. I am the authorized representative of M/s MASTER WIND ENERGY LIMITED, 82-C-1, Gulberg III, Lahore, Pakistan.

3. The contents of the accompanying Tariff Petition dated 23 September, 2011, including all supporting documents are true and correct to the best of my knowledge and belief, and nothing material or relevant thereto has been concealed or withheld therefrom.

4. I also affirm that all further documentation and information to be provided by me in connection with the aforesaid Tariff Petition shall be true and correct to the best of my knowledge and belief.

.....
DEPONENT

VERIFICATION

It is hereby verified on solemn affirmation at Lahore, Pakistan on this 23rd day of September, 2011, that the contents of the above Affidavit are true and correct to the best of my knowledge and belief, and that nothing material or relevant thereto has been concealed or withheld therefrom.

.....
DEPONENT

CERTIFIED TRUE C
MASTER WIND ENERG

ATTESTED

COPY OF BANK DRAFT

22

CERTIFIED TRUE COPY
MASTER WIND ENERGY LTD

TABLE OF CONTENTS

1. DETAILS OF THE PETITIONER

NAME AND ADDRESS

M/S MASTER WIND ENERGY LIMITED
Address: Master House, 54-Darulaman C.S., Main Shahrah-e-Faisal, Karachi, Sindh, Pakistan
Phone #: 92-213-4531068
Fax #: 92-213-4541974

AUTHORIZED REPRESENTATIVES OF MASTER WIND ENERGY LIMITED

- Mr. Naveed Malik:
  Chairman of board of Master Wind Energy Limited

- Mr. Nauman Mirza:
  Chief Financial Officer of Master Wind Energy Limited

2. BACKGROUND – REGULATORY PROCESS LEADING TO TARIFF PETITION

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

2.1.1 NEPRA Act & NEPRA Rules

Under the Regulation for Generation, Transmission and Distribution of Electric Power Act (XL of) 1997 (the **NEPRA Act**), the National Electric Power Regulatory Authority (**NEPRA**) is responsible, *inter alia*, for determining tariffs and other terms and conditions for the supply of electricity through generation, transmission and distribution. NEPRA is also responsible for determining the process and procedures for reviewing tariffs and recommending tariff adjustments. Further, pursuant to the enabling provisions of the NEPRA Act, the procedure for tariff determination has been prescribed in the NEPRA (Tariff Standards and Procedure) Rules, 1998 (the **NEPRA Rules**).

2.1.2 'Policy for Development of Renewable Energy for Power Generation 2006' & 'Guidelines for Determination of Tariff for Wind Power Generation 2006'

In order to avoid multiplicity of entities and stages of negotiations for tariff negotiations, paragraph A.7.2 (*Negotiated Tariff for Unsolicited Proposals and Up-front Tariff*) of annexure A (*Guidelines for Determination of Tariff for Grid-Connected IPPs*) of Policy for Development of Renewable Energy for Power Generation 2006 (the **RE Policy 2006**), issued by the Government of Pakistan in 2006, states:

> *'Multiplicity of entities and states of negotiations will be avoided in the determination of power purchase tariffs for RE IPPs. If an IPP wishes to submit an unsolicited proposal and wants to settle tariff through negotiations, NEPRA will determine the tariff in consultation with the IPP, the power purchaser(s), and other stakeholders'.*

Further, pursuant to section 4.2.1 of the Guidelines for Determination of Tariff for Wind Power Generation 2006 (the **Wind Tariff Guidelines 2006**), issued by the Government of Pakistan under Section 7(6) of the NEPRA Act, if a wind power IPP wants to settle tariff through negotiations, NEPRA shall determine the tariff in consultation with such wind power IPP, the power purchasers and other stakeholders.

2.2 LETTER OF INTENT, APPROVAL OF FEASIBILITY STUDY

2.2.1 Issuance of "Letter of Intent"

MASTER WIND ENERGY LIMITED (the **Project Company**), was issued a LETTER OF INTENT by the Alternative Energy Development Board (the **AEDB**) on January 26, 2005 (the **First LOI**) to develop and establish a 50 MW wind farm.

Following introduction of the RE Policy 2006, the Project Company was issued a LETTER OF INTENT on December 20, 2006 for a 50 MW wind power generation project to be located at Gharo – Keti Bandar Corridor (the **Second LOI**). The

requisite bank guarantee for an amount equal to US$ 250,000 (the **LOI Bank Guarantee**) was submitted to AEDB on March 09, 2011.

2.2.2 **Submission of the Feasibility Study and approval of the same**

In compliance with the requirements of the RE Policy 2006 and the Second LOI, the Project Company completed the detailed feasibility study for its project and submitted the same to AEDB for its approval on 25th August, 2011 (the **Project Feasibility Study**).

Following its review of the Project Feasibility Study, AEDB (vide its letter dated August 27th, 2011 (Ref: B/3/1/MWEL/07) (the **Feasibility Study Approval Letter**)) granted its conditional approval to the Project Feasibility Study relating to the Project Company's wind power project to be located at Jhimpir, District Thatta, Province of Sindh and instructed the Project Company to proceed with its application to NEPRA for tariff. A copy of the Feasibility Study Approval Letter is attached hereto at ANNEXURE A.

The Feasibility Study Approval Letter stated that final approval of the Project Feasibility Study was linked with the approval of the following milestones (the **Conditional Matters**):

(a) Initial Environmental Examination study (the **IEE**) approval from the Environmental Protection Agency, Sindh;

(b) Grid Interconnection Studies (the **Grid Interconnection Studies**) approval from National Transmission and Despatch Company Limited (the **NTDC**); and

(c) Verification of the 'Power Production Estimates' from Risoe.

For the benefit of NEPRA, an update on the status of the Conditional Matters is as follows:

(a) IEE approval from the Environmental Protection Agency, Sindh

The IEE for the Project Company's wind power project (the **IEE Report**) was completed and submitted to the Environmental Protection Agency, Sindh (the **Sindh EPA**) on October 26, 2010. Following review of the IEE Report, the Sindh EPA accorded its **approval** of IEE Report through its decision (Ref: 2010/11/02/IEE/103/116) dated November 27, 2010, the (**IEE Approval Decision**). A copy of the IEE Approval Decision is attached hereto at ANNEXURE B for NEPRA's perusal. Further, pursuant to the Feasibility Study Approval Letter, AEDB has already acknowledged the approval of the IEE Report by the relevant agency for the purposes of its approval of the Project Feasibility Study.

(b) Grid Interconnection Studies approval from NTDC

In compliance with NTDC requirements, the Project Company engaged an experienced & reputable grid consultant namely Power Planners International (the **PPI**) for conducting grid inter-connection studies an d

submitted the detailed interconnection studies (the **Grid Interconnection Studies**) for its wind power project for approval.

Following its review of the Grid Interconnection Studies, NTDC (vide its letter dated 25th May 2011 (Ref: GMPP/CEMP/TRP-380/Common/1597-98) (the **Grid Interconnection Approval Letter**) granted its approval to the Grid Interconnection Studies. Further, pursuant to the Feasibility Study Approval Letter, AEDB acknowledged the approval of the Grid Interconnection Study by the relevant agency for the purposes of its approval of the Project Feasibility Study. A copy of the Grid Interconnection Approval Letter is attached at ANNEXURE C.

(c) Verification of the 'Power Production Estimates' from Risoe

The Project Company has already submitted its "Power Production Estimates" (the **PPE**) to AEDB, which has further initiated the process of verification of the same through RISOE (AEDB's independent technical consultants). It is understood that following RISOE's verification of the PPE, AEDB would be communicating the energy estimates for the project to NEPRA.

2.2.3 **Request for determination of tariff**

Based on:

(a) the status of Conditional Matters provided in Section 2.2.2 (*Submission of the Feasibility Study and approval of the same*) above whereby the Project Company, on its part, has undertaken and completed all activities required for procurement of approvals of the relevant Conditional Matters from various stakeholders – including (as acknowledged by AEDB in the Feasibility Study Approval Letter) the procurement of approvals of its IEE Report and the Grid Interconnection Studies from the relevant agencies;

(b) the provisions of the RE Policy 2006 relating to application to NEPRA for its determination of tariff following approval of the feasibility study, as read in light of the express direction of AEDB to the Project Company (as contained in the Feasibility Study Approval Letter) to proceed with its application to NEPRA for tariff determination,

it is submitted that the requirements of the regulatory process for applying to NEPRA for its determination of the tariff for the Project Company's wind power project are complete.

2.3 SUBMISSION

2.3.1 **PURSUANT TO** the relevant provisions of the NEPRA Rules, read with the provisions of the NEPRA Act and the Rules and Regulations made thereunder; **AND** in accordance with the RE Policy 2006 and the Wind Tariff Guidelines 2006; **AND** in view of compliance by **MASTER WIND ENERGY LIMITED** of the RE Policy 2006 in respect of meeting the requirements of the same so as to be eligible for application for a tariff (as interpreted in light of the Feasibility Study Approval Letter): **MASTER WIND ENERGY LIMITED SUBMITS HEREWITH** before NEPRA, the competent regulatory authority lawfully authorized to determine tariff for wind

power generation companies, for its approval, a tariff petition (the **Tariff Petition**) for approval of (i) the reference generation tariff (the **Reference Generation Tariff**); (ii) the energy production estimates; (iii) the Benchmark Energy Table and Monthly Complex Power Curves; (iv) the Indexations and Adjustments; (v) Adjustments at commercial operations date; (vi) the Correction Factor; and (vii) other matters set out in this Tariff Petition, in each case, for **MASTER WIND ENERGY LIMITED'S** 49.5 MW power generation facility to be located at Jhimpir, District Thatta, Province of Sindh, Pakistan.

2.3.2 Given the advance stage of the project, NEPRA is kindly requested to process the Tariff Petition at the earliest, thereby enabling the Project Company to proceed further with the development process.

3. EXECUTIVE SUMMARY

3.1 MASTER WIND ENERGY LIMITED – THE PROJECT COMPANY

3.1.1 **MASTER WIND ENERGY LIMITED** (being the **Project Company**) is a company which has been established and set up under the laws of Pakistan and is incorporated under the Companies Ordinance 1984.

3.2 PROJECT SUMMARY

3.2.1 In light of the approval of the Project Feasibility Study in accordance with the RE Policy 2006 and the Feasibility Study Approval Letter and the compliance by the Project Company of all requirements under the RE Policy 2006 for eligibility of a petition for the tariff and following approval of Project Company's Reference Generation Tariff by NEPRA through this Tariff Petition, the Project Company will finance, design, engineer, procure, construct, install, test, complete, commission, insure, operate and maintain a 49.5 MW power generation facility (the **Facility**) at Jhimpir, District Thatta, Province of Sindh, Pakistan (the **Project**).

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

PROJECT COMPANY	MASTER WIND ENERGY LIMITED
MAIN SPONSOR	MASTER GROUP
PROJECT CAPACITY	49.5 MW
PROJECT LOCATION	Jhimpir, District Thatta, Province of Sindh, Pakistan
LAND AREA	1,408 Acres
CONCESSION PERIOD	20 years from commercial operations date
POWER PURCHASER	National Transmission and Despatch Company Limited (through Central Power Purchasing Agency)
WIND TURBINES	33 x GE 1.55MW XLE WTGs each of 1.5MW
ENERGY PRODUCTION ESTIMATE	• Year 1 & Years 11 – 20: 140.811 GWh per annum • Year 2 – 10: 143.830 GWh per annum
EPC CONTRACTORS	China Machinery Engineering Corporation: and China East Resource Import & Export Corporation

<table>
<tr><td>PROJECT CAPITAL COST</td><td>
<table>
<tr><th>INVESTMENT / COST</th><th>USD IN THOUSANDS</th></tr>
<tr><td>EPC COST</td><td>108,000.00</td></tr>
<tr><td>LC CONFIRMATION</td><td>1,327.93</td></tr>
<tr><td>NON EPC COST</td><td>1,712.00</td></tr>
<tr><td>PROJECT Development COST</td><td>3,700.00</td></tr>
<tr><td>LAND COST</td><td>88.00</td></tr>
<tr><td>TAXES & CUSTOM DUTY</td><td>780.30</td></tr>
<tr><td>PRE-COD INSURANCE COST</td><td>1,475.93</td></tr>
<tr><td>FINANCIAL CHARGES</td><td>3,522.99</td></tr>
<tr><td>ECA / SINOSURE</td><td>4,420.66</td></tr>
<tr><td>INTEREST DURING CONSTRUCTION</td><td>7,652.19</td></tr>
<tr><td>WORKING CAPITAL</td><td>997.00</td></tr>
<tr><td>TOTAL PROJECT COST</td><td>133,677.00</td></tr>
</table>
</td></tr>
<tr><td>FUNDING PLAN</td><td>Debt 75% : Equity 25%</td></tr>
<tr><td>EQUITY</td><td>US$ 33,419,250</td></tr>
<tr><td>LONG TERM DEBT</td><td>US$ 100,257,750</td></tr>
<tr><td>LENDERS</td><td><u>Potential Foreign Lenders</u>
• Development Financial Institutions; and
• Export Credit Agencies

<u>Local Lenders</u>
• Consortium of Commercial Banks</td></tr>
<tr><td>TERMS OF LONG TERM DEBT</td><td>
<table>
<tr><td>Currency</td><td>Mix of US Dollars or Euro (50%) and Pakistan Rupees (50%)

The debt mix assumed for the Project will be firmed up and submitted prior to achievement of financial close (further details are given in Section 65.3.3)</td></tr>
<tr><td>Term</td><td>Up to 12 years (door to door)</td></tr>
<tr><td>Grace Period</td><td>Up to 24 months</td></tr>
<tr><td>Repayment Period</td><td>10 years</td></tr>
<tr><td>Debt Repayment</td><td>In equal semi-annual installments</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Interest Rate</td><td>• For Local Currency Debt
Base Rate: 6 months KIBOR
Spread: 300 basis points; and

• For Foreign Currency Debt
Base Rate: 6 months LIBOR/Euribor
Spread: 500 basis points (inclusive of ADB REDSIP Facility Fee)</td></tr>
</table>
</td></tr>
<tr><td>O&M CONTRACTORS</td><td>GE Wind Energy; General Electric International Inc.; and China East Resource Import & Export Corporation</td></tr>
<tr><td>PROJECT OPERATION COST</td><td>(US$ in '000)
<table>
<tr><th></th><th>Yr 1-2</th><th>Yr 3-10</th><th>Yr 11-20</th></tr>
<tr><td>O&M Cost</td><td>1,790</td><td>3,350</td><td>3,600</td></tr>
<tr><td>Insurance Cost</td><td>1,080</td><td>1,080</td><td>1,080</td></tr>
<tr><td>TOTAL OPERATING COST</td><td>2,870</td><td>4,430</td><td>4,680</td></tr>
</table>
</td></tr>
<tr><td>LEVELIZED TARIFF</td><td>US¢ 15.9561 per kWh</td></tr>
<tr><td>CONCESSION DOCUMENTS</td><td>• Energy Purchase Agreement with the Power Purchaser
• Implementation Agreement with the Government of Pakistan
• Government of Pakistan Guarantee
• Site Sub-Lease Deed</td></tr>
<tr><td>APPLICABLE GOP POLICY</td><td>Policy for Development of Renewable Energy for Power Generation 2006</td></tr>
<tr><td>LEGAL COUNSEL</td><td>Haidermota and Co.</td></tr>
<tr><td>TECHNICAL ADVISORS</td><td>• MEConsult Private Limited
• Lahmeyer International (for wind resource assessment)</td></tr>
<tr><td>FINANCIAL ADVISORS</td><td>Bridge Factor</td></tr>
</table>

3.3 KEY STRENGTHS

Amongst various other factors, the following are proposed as key strengths of the Project:

(a) **World class contractors to undertake engineering, procurement and construction (the EPC) of the Project on a turn-key basis with a fixed price and fixed commercial operations date:**

In view of the Project Company's strong commitment to the Project and in order to lock the EPC price and the projected commercial operations date for the Project, a consortium of CHINA MACHINERY ENGINEERING CORPORATION (**CMEC**) and CHINA EAST RESOURCE IMPORT & EXPORT CORPORATION (**CERIEC,** and together with the CMEC, the **EPC Contractors**) will undertake the Project on a **turn-key**, **fixed price** and **fixed commercial operations date** basis whereas GENERAL ELECTRIC will be the wind turbine manufacturer.

GENERAL ELECTRIC ranks as one of the world's leading wind turbine suppliers boasting a current product portfolio of wind turbines with rated capacities ranging from 1.5 MW – 4.1 MW and support services extending from development assistance to operations and maintenance. CMEC possesses a market edge with exporting complete hydro and thermal plants and equipment and the construction of a wide variety of engineering projects, particularly international power stations. CERIEC has achieved numerous projects in the fields of electric power transmission and transformation and building construction through its main businesses of import & export of various kinds of mechanical and electrical products and complete plant equipment; contracting projects on EPC basis; and technical transfer etc.

(b) **World class operators to undertake operations and maintenance (the O&M) of the Project on a turn-key basis:**

The O&M of the Project will be performed by the EPC Contractors in the first two years following commercial operations date on a **turn-key basis**. GENERAL ELECTRIC, the wind turbine manufacturer for the Project, will perform the O&M of the Project from year 3 to 10 following commercial operations date on a **turn-key basis**.

(c) **Reputable sponsor with unwavering commitment to wind energy**:

Master Group, the sponsor of the Project Company, is one of Pakistan's most dynamic industrial concerns commanding over 50% of the domestic foam market and has rapidly diversified into other areas such as Textiles, Auto-motive parts, spring mattress production and General Trading. Master Group has an annual turnover of Rs. 16.5 billion and enjoys impeccable integrity both in the international and domestic markets. It is expected that the various standards of excellence forming part of the business ideology of all companies of the Master Group will also be replicated in its wind power generation venture.

(e) **Strong Project Team**:

The Project Company is advised by leading consultants as Project advisors who have played a key role in the development of wind energy in Pakistan. The Project advisors are presently also advising various stakeholders in

other wind power projects and are playing a pivotal role in the consummation of some of the upcoming wind farms in the country.

(i) Technical Consultant – **MECONSULT PRIVATE LIMITED** has been involved with the wind industry in Pakistan since its inception. They was instrumental in helping AEDB develop the project documents (energy purchase agreement and implementation agreement) as well as other policy documents. MEConsult Private Limited is currently advising a number of wind farm developers. It is also doing consultancy work for thermal power projects. With the appointment of **LAHMEYER INTERNATIONAL** as its technical advisor for wind assessment, the Project Company has chosen one of the most reputable technical consultants in Pakistan and also the foremost engineering consultant for wind power projects. Lahmeyer International is active in all types of infrastructure projects, in the energy sector in the fields of overall planning studies, power system planning, hydroelectric, thermal and nuclear power generation, renewable energy, power transmission and distribution systems, control and communication systems, Supervisory Control and Data Acquisition (SCADA) and load dispatch systems. Lahmeyer International has a long working history in Pakistan. In the field of wind power, Lahmeyer International has in excess of 3,000 MW currently under contract and therewith is the largest international wind energy technical adviser. With MEConsult Private Limited and Lahmeyer International on the side of the Project Company, the Project is best positioned for the avoidance of technical risks.

(ii) Legal Consultant – **HAIDERMOTA & CO.** has been selected to provide legal support on all aspects of the Project including Project documentation, regulation and financing matters. Haidermota & Co. has been actively involved in the power sector and projects and has advised various project companies / sponsors, lenders and the Government of Pakistan on various transactions and matters. It is ranked by Chamber & Partners as a "*Band 1*" firm in Pakistan for Projects, Banking & Finance and Corporate & Commercial.

(iii) Financial Consultant – The Project Company has chosen **BRIDGE FACTOR** as its financial consultant for the Project. Bridge Factor provides capital & financial solutions to companies across a diverse range of industries and has a specialized team with particular strengths in corporate strategy, capital restructuring, corporate finance, divestments, and mergers and acquisitions. Bridge Factor has in depth knowledge of the local power sector and has been working with wind power projects in Pakistan for the last 3 years. Bridge Factor has also assisted various thermal power projects in achieving financial close.

3.4 CURRENT PROJECT PROGRESS & FUTURE MILESTONES

The following table shows the current Project status and the anticipated timelines for the future activity.

MILESTONES ACHIEVED TO DATE	
ACTIVITIES	**COMPLETION DATE**
Issuance of first Letter of Intent	January 26, 2005
Issuance of Second Letter of Intent	December 20, 2006
Geo-technical Survey	March, 2007
Installation of Wind Mast & Instruments	April, 2007
Initial allocation of Land by AEDB	April 18, 2008
IEE approval by Sindh EPA	November 27, 2010
Appointment of Financial Advisors	March 29, 2011
Agreement to Lease for land allocated by AEDB (Extension)	April 06, 2011
Appointment of Technical Consultant	May 24, 2011
Approval of Grid Interconnection Studies by NTDC	May 25, 2011
Appointment of Legal Advisors	June 02, 2011
Topography Survey	July, 2011
Approval of Project Feasibility Study by AEDB	August 27, 2011
Finalization of O&M Terms & Arrangements	August 28, 2011
Finalization of EPC Terms & Arrangements	August 28, 2011

FUTURE MILESTONES
Reference Generation Tariff determination by NEPRA
Submission of Performance Guarantee for issuance of Letter of Support
Issuance of Letter of Support to the Project Company
Execution of Site Sub-lease Deed
Execution of Energy Purchase Agreement
Execution of Implementation Agreement
Execution of Financing Agreements with Lenders
Achievement of financial close
Execution & issuance of Government of Pakistan Guarantee
Issuance of notice to commence to the EPC Contractors
Project execution / construction
Commercial Operations Date
Adjustment/True-up of Reference Generation Tariff by NEPRA

4. THE PROJECT & KEY CONSIDERATIONS

4.1 RATIONALE FOR WIND POWER

4.1.1 Pakistan's Current Electric Power Shortage[1]

The electricity consumption in the country during 2009-2010 has increased by 5.65% to 74,348 GWh as compared to 70,371 GWh for the same period the year before. The electricity demand in the country is projected to grow at an annual rate of 7.4% during the period 2011-2015, and increase from 23,563 MW in 2011 to 31,299 MW in 2011-2015. This growth has been projected on the basis of increase both in population and per capita income and the linkage between the increasing population, per capita income and electricity consumption.

Pakistan as a whole is an energy-deficient country and per capita electricity generation has traditionally been low (581 KWh as against the global average of 2,657 KWh[2]).

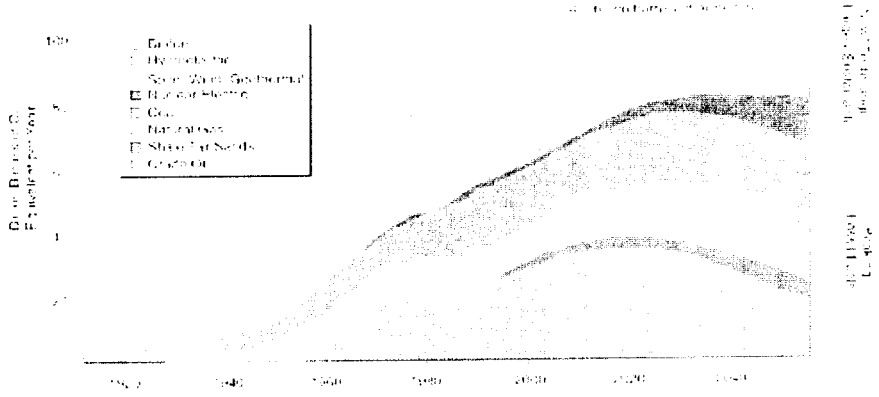
4.1.2 Pakistan's Power Generation Mix & Fossil Fuel Reliance

Power is provided through conventional and non-conventional sources, which is the main asset needed for any development activity within the country. Conventional thermal plants, those that use oil, natural gas and coal, contribute to 67.3% of Pakistan's power generation capacity, followed by hydro power generation, which is contributing up to 29.4% of Pakistan's power generation capacity and lastly, nuclear power generation and imported electricity forming up to 3.3% of the country's power generation mix.

The escalating reliance of the world economies to the use of fossil fuels on an international basis and the continuous use thereof, is causing a reduction in the reserves and severe environmental issues and is creating many grave concerns for the future. The graph on the next page exhibits the "World Energy Demand Schedule":

[1] Source: Pakistan Energy Year Book 2010 and NEPRA State of Industry Report, 2010
[2] Source: Medium Term Development Framework 2005-10, Government of Pakistan, 2005

World Energy Demand—Long-Term Energy Sources



Generating energy through the use of thermal power projects has become extremely expensive due to the increase in prices of oil and gas across the globe. The highly unpredictable oil and gas prices in the past few years have had an adverse effect on world economies and have contributed significantly to the global recession. Energy security combined with the need to cut carbon emissions, has seen a huge increase in demand for renewable energy in particular wind power.

As for Pakistan's dependence on such fossil fuels, the overall energy requirement of the country is expected to increase to about by 48% to 80 million tons of oils equivalents in 2011. The serious threat of rising prices to Pakistan was evidenced during 2007-2008 when the prices of oil equivalents sky rocketed globally – leaving the country's economy in distress.

If Pakistan is to develop at a faster pace to attain a seven to eight per cent GDP growth, then it is imperative to address its energy needs. Pakistan is currently deficient by between 3500 MW to 5,000 MW whereby the shortage is likely to be around 20,000 MW within 10 years.

The demand for oil is highly dependent on global macroeconomic conditions. According to the International Energy Agency, high oil prices generally have a large negative impact on the global economic growth. Such volatile prices adversely affect economies of developing countries like Pakistan and will continue to do so if alternate resources are not harnessed for development of renewable energy.

In order to circumvent power shortfalls resulting from the volatility of fossil fuel availability and prices, solutions need to be sought from local energy resources like domestic coal and renewable energy resources such as hydel, wind and solar. All of these options could assist in reducing Pakistan's reliance on imported fuel, and consequent vulnerability to changes in global oil prices.

4.1.3 Wind Power Projects – The Solution

In order for a sustainable future for Pakistan with regards to energy, it is necessary that the energy sector be accorded with high priority. It is considered that wind

power generation could become an important supplier to Pakistan's electricity supply in the future. The development of wind generation projects supports the environmental objectives of the Government of Pakistan by:

(a) diminishing reliance on fossil fuels for thermal power generation;

(b) broadening the variety in Pakistan's electricity generation mix;

(c) decreasing green house gas emissions by prevention of thermal power generation; and

(d) facilitating in the declination of the excessive trade deficit.

4.1.4 The Wind Power Generation Potential & Government of Pakistan's Support

The wind power generation program in Pakistan was initiated by installation of wind measuring stations in the coastal areas of Sindh, Pakistan. The energy potential of 346,000 MW in the country is estimated by National Renewable Energy Laboratory, USA and only the Gharo – Keti Bander – Hyderabad wind corridor (the **Wind Corridor**) has a potential of 43,000 MW of wind power generation. If harnessed adequately, wind energy alone would have the potential to eradicate energy shortages in the country. The Government of Pakistan is currently looking to build wind farms in the Wind Corridor, some of which are regions where electricity supply through the national grid has been a challenge.

The Government of Pakistan has clearly articulated its support for the development of renewable energies. Due to the fact that the use of wind energy is one of the most economical and efficient renewable energy production technique, the focus is on supporting the development of wind farms through wind based independent power producers (the **Wind IPPs**).

4.2 World Class WTG Technology & EPC Contractor; Firm EPC Cost and Fixed Commercial Operations Date

4.2.1 WTG Technology & EPC Contractor Selection Process

With an objective of setting up its Project in compliance with the highest standards and, *inter alia*, to select the most efficient and reliable wind turbine generator (the **WTG**) suppliers and engineering, procurement & construction (the **EPC**) contractors for its Project, the Project Company conducted thorough research of various WTG suppliers and EPC contractors in the global wind power generation EPC industry.

Based on the technical feasibility and careful analyses of, *inter alia*:

- various turbine designs;
- control system developments;
- innovative technology evaluations;
- wind test measurement services; and

- various strategic and policy matters so as to understand the interplay between technology, policy and economics,

the Project Company and its technical advisors shortlisted various technologies and WTG vendors for its wind farm to be located at Jhimpir, District Thatta, Province of Sindh, Pakistan (the **Site**). Subsequently, the Project Company invited such vendors and contractors to, either themselves or through designated EPC contractors, provide turn-key EPC solutions for the engineering, procurement, construction, commissioning, testing and completion of the Project – thus not only working towards, *inter alia*, development of its Project so as to meet the highest technical standards but also towards a bankable EPC contractual structure that was based on highly competitive and intensely negotiated terms.

Various factors were considered in selection of the WTG manufacturers and the EPC contractors that included:

- technology, megawatt class and efficiency of equipment;
- compliance of the proposed WTG with Site conditions;
- commitment of various WTG suppliers and EPC contractors to Pakistani markets;
- references and experiences of the WTG suppliers and EPC contractors under environmental conditions similar to that of the Site (e.g. temperature, wind farm size, area);
- track record of the turbine type;
- cost/price and payment terms;
- performance warranties and guarantees of Facility;
- contractual and commercial terms for entering into the contractual arrangements;
- completion timelines and schedule;
- grid compatibility; and
- suitability of operation and maintenance concept for the size and location of projects with suitable availability of spare parts, consumables and main components.

The Project Company received "EXPRESSIONS OF INTEREST" from various international WTG suppliers and EPC contractors including Vestas from Denmark; Gamesa from Spain; Nordex from Germany/China; and General Electric/ China Machinery & Equipment Import & Export Corporation from China.

Based on its thorough due diligence and following an intense negotiations process with various EPC contractors and WTG suppliers, the Project Company selected (i) GENERAL ELECTRIC'S WTG Model 1.5xle as the technology for its wind farm and

(ii) a consortium of CHINA MACHINERY ENGINEERING CORPORATION and CHINA EAST RESOURCE IMPORT & EXPORT CORPORATION as its turn-key EPC contractors (the **EPC Contractors**). The Project Company has finalized, following detailed negotiations and development of a comprehensive contractual structure, all commercial, technical and legal terms and arrangements with its EPC Contractors for the EPC of its Project (the **EPC Terms & Arrangements**). Based on such EPC Terms & Arrangements, the engineering, procurement and construction of the Project will be undertaken by the EPC Contractors on a **turn-key basis** with a **fixed price** and **fixed commercial operations date** (the **COD**).

4.2.2 **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 13,500 wind and 3,600 hydro turbines, the installed capacity of renewable energy exceeds 160,000 MW. Building on a strong power generation heritage and spanning more than a century, GENERAL ELECTRIC wind turbines have delivered proven performance, availability and reliability. 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 MW – 4.1 MW and support services extending from development assistance to operation and maintenance.

4.2.3 **China Machinery Engineering Corporation (CMEC) – The Offshore Contractor**

CHINA MACHINERY & EQUIPMENT IMPORT & EXPORT CORPORATION (**CMEC**) was established in 1978 as China's first national corporation integrating foreign trade with industry and deals principally in contracting international engineering projects; exporting complete plants and equipment; importing & exporting mechanical and electrical products; and engaging in external economic and technical cooperation.

With its turnover reaching USD 2.36 billion in 2008, CMEC has successively been selected as one of the TOP 225 INTERNATIONAL CONTRACTORS by the well-reputed *Engineering News Record of the USA* since 1996, ranking from the 106th place in 1996 to 64th in 2003.

Possessing a prominent edge in the construction of international engineering projects; exportation of complete plants and equipment; and importation & exportation of mechanical and electrical products; CMEC takes the lead in China particularly in contracting international power stations and a wide variety of large engineering projects.

Since the 1980s, CMEC has achieved a number of significant firsts throughout China in the power business including:

- exporting China's first set of 210 MW thermal power plant by means of the export seller's credit in the 1980s;

- exporting units of coal/gas-fired turbine power station and single unit of 320 MW thermal power plant in the 1990s; and

- winning an international tender for the construction of four units of 30 MW hydro power stations in Africa.

CMEC has exported complete plants and equipment to over 60 countries and regions involving projects in diverse fields such as energy; electrical engineering; heavy duty mining installations; general purpose machinery, light industry; textile industry; building materials; traffic and transportation; communication; broadcast and television; etc., of which, the contractual units of hydro and thermal power plants signed exceeded 6,100 MW in the aggregate. Further, more than 50,000 personnel (including senior engineers, engineers, technicians and skilled workers of various fields) have been engaged outside China to take on the construction of relevant projects.

CMEC has built business relationships with more than 120 countries and regions around the world, forming a global network of information, distribution and services and a pattern of diversified marketing across five continents. The insignia of CMEC and trademarks of the related products are protected by laws and have been registered in many countries and regions – thus providing CMEC a world-renowned reputation.

With 23 wholly-owned and holding subsidiary companies in China, 11 wholly-owned and holding companies and 11 representative offices based in other countries of the world, CMEC has grown and developed into a comprehensive enterprise group linked with property ownerships, pillared by foreign trade and integrated as one entity with trade, industry, science, technology and services.

4.2.4 China East Resource Import & Export Corporation (CERIEC) – The Onshore Contractor

CHINA EAST RESOURCE IMPORT & EXPORT CORPORATION (**CERIEC**) is a wholly-owned subsidiary of CMEC and was established in 1993. CERIEC's main businesses include the import & export of various kinds of mechanical and electrical products and complete plant equipment; contracting projects on EPC basis; technical transfer; and international labor cooperation. To its credit, CERIEC has closed numerous projects globally in the fields of electric power transmission and transformation; substation construction; and building construction.

CERIEC has seized every available opportunity worldwide to develop and expand its brand and to step into international economic development. Having attained the certification of ISO9001, CERIEC has established and developed various forms of economic cooperation with corporations, enterprises and groups (both at home and abroad) to open international markets and to expand economic exchange and trade.

In addition to above, CERIEC has been repeatedly entrusted by relevant Chinese authorities and has successfully accomplished introducing key technologies and equipment of national importance, which itself demonstrates the professional excellence of CERIEC.

4.3 TECHNOLOGY & EQUIPMENT

With an aim of achieving highest standards in technology for its Project, coupled with a thorough due diligence process carried out by the Project Company in its selection of the technology, the Project Company has opted for advanced versions

of models of the equipment, as well as the technical configuration, for the Project. The following WTGs have been selected for the Project:

MANUFACTURER	GENERAL ELECTRIC
WIND TURBINE GENERATOR	MODEL 1.5XLE
HUB HEIGHT	80 M
NUMBER OF TURBINES	33
TOTAL INSTALLED CAPACITY	49.5 MW

The Facility configuration consists of 33 numbers of GE 1.5XLE WIND TURBINE GENERATORS (the **GE 1.5XLE WTG**); 99 (ninety nine) GE 1.5XLE WTG blades (40.3m length); electrical equipment, together with ancillary equipment and other goods and machinery.

All functions of the selected GE 1.5XLE WTG are monitored and controlled by a micro-processor based control system. In addition, the wind turbines are equipped with a remote monitoring system.

The design used by the GE 1.5XLE WTG is aimed at achieving high safety and environment mechanisms. Moreover, as per the Project Company's analyses, the equipment is suited to the conditions at the Site.

The GE 1.5XLE WTG is part of General Electric's 1.5 MW series of WTGs. The 1.5 MW series is General Electric's most widely deployed wind turbine i.e. more than 16,500 WTGs installed globally and is known for its:

- conformance and compliance to the International Electrotechnical Commission (the **IEC**) standards;
- high availability in a variety of wind classes;
- continual investment for achievement of highest capacity factor in its class; and
- sharing of components that ensures consistent workhorse reliability, ease of maintenance planning and high commonality in spare parts.

4.4 WORLD CLASS O&M ARRANGEMENTS

The operations and maintenance (the **O&M**) of the Project will be performed by the EPC Contractors in the first two years following COD. GENERAL ELECTRIC, the wind turbine manufacturer for the Project, will perform the O&M of the Facility from year 3 to 10 following COD. The Project Company has finalized, following detailed negotiations and development of a comprehensive contractual structure, all commercial, technical and legal terms and arrangements with its EPC Contractors (in case of year 1 to 2 following COD) and General Electric (in case of year 3 to 10 following COD) for the **turn-key O&M** of its Project (the **O&M Terms & Arrangements**).

Based on the O&M Terms & Arrangements, the EPC Contractors (in case of year 1 to 2 following COD) and General Electric (in case of year 3 to 10 following COD) (the **O&M Contractors**) have, as part of their obligations under the O&M Terms

& Arrangements, guaranteed the performance of the Facility, thus minimizing the operational risk of the Project. The O&M Terms & Arrangements cover minimum performance standards of the Facility and provide a complete turn-key O&M solution for the Project.

It is highlighted that the development of a bankable O&M contractual arrangement for the Project by the Project Company and its contracting parties on its own is a landmark achievement for Pakistan's wind sector.

General Electric is currently running five O&M contracts for thermal power plant, including full balance of plant, for a total generation of 1050MW. Internationally, General Electric has been providing full service arrangements to the wind power plants for the past several years. These arrangements provide wind turbine owners with total support for all planned and unplanned maintenance and operations needs as well as guaranteed availability of the turbines.

4.5 ENERGY YIELD GUARANTEE – FIRST OF ITS KIND IN WIND IPPS

Unlike most precedent Wind IPPs, the Project Company has the unique distinction of obtaining a "MONTHLY & YEARLY ENERGY PRODUCTION GUARANTEE" from its O&M Contractors pursuant to the O&M Terms & Arrangements (the **Energy Yield Guarantee**). Pursuant to the Energy Yield Guarantee, the O&M Contractors have guaranteed the energy production of the WTG's on a monthly as well as on yearly basis for their respective terms. Shortfall in energy production during the billing month will trigger liquidated damages equivalent to the loss of revenue of the Project as per the prevailing tariff. It will be for the first time in the history of wind power plant operations that a WTG vendor has agreed to provide a tangible, measurable and an implementable guarantee for performance.

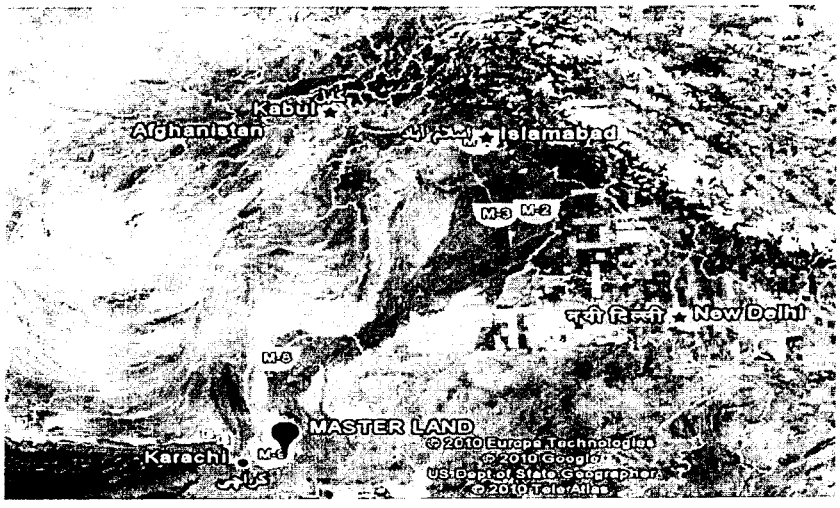
4.6 THE SITE

The Site for the Project is located at Jhimphir, which is 30 miles north east from Hyderabad and around 70 miles from Karachi. The Site lies between the National Highway and the Super Highway which runs from Karachi to Hyderabad. Major water reserve of the area is found at Keenjhar Lake (also known as Kalri Lake) which is located at 7 miles from the Site.

The general area of Jhimpir (including the Site) is a semi desert area and its surroundings consist of flat and hard rocky terrain with an elevation of approximately 40m to 50m above sea level. The Site has very sparse little ground cover consisting of small shrubby bushes.

The nearest grid station to the Site is the Jhimpir Grid Station, which is located at a distance of approximately 6-7 km from the Site, bearing coordinates 25 01.882 N, 68 00.413 E.

FIGURE 1: SITE OVERVIEW



4.7 POWER OFF-TAKE & THE GOVERNMENT OF PAKISTAN'S IMPLEMENTATION AGREEMENT

The electricity generated through the Project will be sold to National Transmission and Despatch Company Limited (through its Central Power Purchasing Agency) on behalf of ex-Wapda distribution companies (the **Power Purchaser**) pursuant to the energy purchase agreement (the **EPA**), which in turn will distribute and modulate the electricity generated by the Project Company.

In furtherance of the Government of Pakistan's model for setting up the IPPs in Pakistan, the Project Company will also enter into an Implementation Agreement (the **IA**) with the Government of Pakistan in respect of the Project.

The EPA will be finalized and executed by and between the Project Company and the Power Purchaser and the IA will be finalized and executed by and between the Project Company and the Government of Pakistan, in each case, following NEPRA's approval of the Project Company's 20 years Reference Generation Tariff and the issuance of the "LETTER OF SUPPORT" by the Government of Pakistan to the Project Company.

It is submitted that pursuant to section 8.2.1 of the RE Policy 2006, it is mandatory for the power distribution utilities to buy all electricity offered to them by renewable energy projects that are established in accordance with the provisions given in section 8.2.2 of the RE Policy 2006. Further, since the Project is in accordance with section 8.2.2 of the RE Policy, section 8.2.1 of the RE Policy 2006 will be applicable to it. In view of the foregoing, the Project Company (vide its letter dated August 3, 2011 (Ref: MWEL/NTDC/025/2011) offered for sale to the Power Purchaser the power to be generated through its Project pursuant to the terms of the EPA (the **Offer To Sell Power**). A copy of the Offer To Sell Power is attached hereto at ANNEXURE D for NEPRA's reference. We understand that the Power Purchaser (vide its letter dated September 23, 2011 (Ref: COO/CPPA/CE-II/MT-IV/MWEPL/8079-81) has initiated its process of procuring NEPRA's consent to acquire power from the Project Company.

4.8 ESTIMATED OUTPUT

In line with AEDB's guidelines, the Project Company's technical consultants carried out detailed evaluations to estimate the energy production for the Project based on:

(a) the selected WTG;

(b) the Site conditions;

(c) micrositing; and

(d) wake effect of neighboring wind farms.

The summary of the results is as follows:

GROSS CAPACITY	**49.5 MW**
ANNUAL FULL LOAD HRS	**2872 HRS**
AUXILIARY CONSUMPTION	**3% (APPROX)**
AVE WTG AVAILABILITY	**95.9%**
NET CAPACITY FACTOR	**Approx 32.79%**
ANNUAL ENERGY GENERATION (20 YEAR EQUIVALENT NET AEP)	**142.171 GWh***

**the Annual Energy Generation has been calculated in line with the Energy Yield Guarantee provided by the O&M Contractors pursuant to the O&M Terms & Arrangements.*

4.9 TOTAL PROJECT COST AND CAPITAL STRUCTURE

4.9.1 Total Project Cost

Based on the assumptions contained in this Tariff Petition and in light of the proposed discussion contained in Section 5 (*Total Project Cost & Investment*), the proposed Project cost is USD 133,677,000 (United States Dollars One Hundred Thirty Three Million Six Hundred and Seventy Seven Only) (the **Total Project Cost**).

4.9.1 Capital Structure

The planned financing of the Total Project Cost is by:

(a) 25% equity (the **Equity**) – to be mainly contributed by the sponsor i.e. the Master Group; and

(a) 75% debt (the **Debt**) – to be contributed by lenders (the **Lenders**) constituting of:

(i) a consortium of local financial institutions (the **Local Lenders**) providing local financing in Pakistani Rupees to the Project Company (the **Local Financing**); and

(ii) a consortium of foreign multilaterals and financial institutions (the **Foreign Lenders**) providing foreign financing in United States Dollars to the Project Company (the **Foreign Financing**).

4.10 THE SPONSOR – MASTER GROUP

Master Group, being the main sponsor of the Project Company (the **Sponsor**), is one of the most dynamic and leading business groups of Pakistan. The Sponsor started its operations by entering into the bedding industry in 1963 as a licensee of Bayer A.G. (Germany) to manufacture foam mattresses in Pakistan and became a pioneer in the bedding industry. Today with a strong fixed / current asset base of over Rs. 12 billion, the Sponsor is not only the leading player of bedding market (having more than 50% market share) but has also diversified over the period into the textile and auto & engineering sectors.

In the year 1988, the Sponsor entered into the manufacturing and supply of automobile interiors including seats with reclining mechanism and assembly, roof headlining and door trims to renowned OEMs such as Honda, Toyota, Suzuki, Nissan, Daihatsu, Hino and Volvo and today fulfils 70% of the requirements of the OEMs in Pakistan. In 1993, the Sponsor installed its first state of the art weaving unit marking its entry into the textile business. The textile unit is projected to have a turnover of over Rs. 7 billion during 2011.

Having an annually increasing group turnover of more than Rs. 16.5 billion, the Sponsor is committed to play its part in the development of Pakistan's various sectors. Realizing the role of clean energy in development of the nation, the Sponsor has now ventured into the power generation sector by initially planning to install the Project through the Project Company.

The key financial figures of the Sponsor are illustrated below for NEPRA's reference.

Key Financials of the Group

	2008	2009	2010	Projected - 2011
Revenue	8,582,321,791	9,562,124,667	10,682,445,[illegible]	16,477,055,639
Profit	45,620,600	44,040,[illegible]	277,056,[illegible]	941,015,316
Assets	9,427,443,027	9,167,139,216	10,446,246,094	11,954,945,743
Liabilities	[illegible]	5,679,935,795	4,675,092,[illegible]	5,524,00[illegible]

4.11 REFERENCE GENERATION TARIFF

The Reference Generation Tariff, as approved by NEPRA, will be integrated into the EPA. The Project Company hereby respectfully requests NEPRA to kindly ensure consistency between the adjustment formulae and indexations to be applied to the Reference Generation Tariff normally conveyed to the petitioner in NEPRA's tariff determination order since these formulae and indexation will also form part of schedule 1 to the EPA. Consistency must therefore be maintained, as requested, between NEPRA's tariff determination order and schedule 1 to the EPA.

4.12 CARBON CREDITS

The Clean Development Mechanism (the **CDM**) is one of the flexible, project-based mechanisms for greenhouse gas emission reductions (the **GHG**) under the Kyoto Protocol. By using the CDM, two countries can jointly develop GHG emission reductions projects. While the project proponents in the host country sell the emission reductions from the project as Certified Emission Reductions (the **CERs**), project participants in the partner country act as the CER buyer. In this set-up, the host country of the project benefits from domestic investment and technology transfer. For the owners of the CDM project, selling CERs means additional revenues to the project. Each CER represents one ton of carbon dioxide equivalent abated by the project.

The CDM was initiated under the Kyoto Protocol of the United Nations Framework Convention on Climate Change (the **UNFCCC**) in order to explore cost- effective options to mitigate the impacts of climate change. It is one of the instruments that help the developing countries in achieving sustainable development, while at the same time contributes to the ultimate objective of the UNFCCC. CDM assists the developing countries to implement project activities that reduce GHG emissions in return for generating carbon credits/ CERs.

Pakistan deposited its instrument of accession to the Kyoto Protocol on January 11, 2005, and thus became eligible to benefit from CDM. For this purpose the Ministry of Environment has been declared as the Designated National Authority (the **DNA**). A 'CDM Cell' was established in Pakistan in August 2005 for providing technical and policy support to conduct awareness raising, enhancement of capacity for CDM project development, review of CDM projects for grant of approval by the DNA and to advise the Government of Pakistan in technical matters related to CDM in Pakistan. It was also established to implement the CDM strategy.

Pakistan national operational strategy for CDM was approved by the Prime Minister of Pakistan in February 2006. The strategy provides policy guidance for implementation of CDM in Pakistan in line with national sustainable development goals. It is an incentive based strategy that ensures efficiency and transparency. The strategy defines institutional arrangement for implementation of CDM in Pakistan, tax and credit sharing policy and the criteria grant of host country approval to CDM projects.

Section 8.3.3 of the RE Policy 2006 states:

> *...all qualifying Renewable Energy (the **RE**) projects shall be eligible for financing under the Clean Development Mechanism (CDM) and will be encouraged to register for Certified Emission Reduction (CER) credits with the CDM Executive Board, either collectively or individually.*
>
> *The Government shall also strive, in collaboration with international development agencies and to the extent possible, to facilitate project applications for such carbon credits in order to reduce the associated initial transaction costs for project sponsors. Importantly, as this policy creates significant incremental costs for the RE power purchaser (higher tariffs, resource availability risks, backup power provision, transmission and interconnection infrastructure, etc.), it is deemed appropriate that any carbon credits thus obtained by RE IPPs be utilized to partly offset this*

burden so as to improve the economic competitiveness of RE-based grid power for both the rate payers and the producers...

While it appears possible that the Project may be able to realize monetary gains from such carbon credit schemes, the actual timing, amount, and other details of the outcome are quite uncertain at this point. It is thus proposed that the Reference Generation Tariff for the Project be approved irrespective of the outcome of the carbon credits.

However, if any CER related revenues are realized, it is submitted that they will be shared as per the policy of the Government of Pakistan. Regardless of the outcome, the Project Company has already initiated the CDM project for the Project at its own cost and negotiations with various internationally reputed CDM consultants have already been initiated to complete the CDM project.

4.13 ADDITIONAL INFORMATION

4.13.1 Following pertinent information is hereto attached for NEPRA:

(a) **ANNEXURE A** – COPY OF FEASIBILITY STUDY APPROVAL LETTER;

(b) **ANNEXURE B** – COPY OF IEE APPROVAL DECISION;

(c) **ANNEXURE C** – GRID INTERCONNECTION APPROVAL LETTER;

(d) **ANNEXURE D** – OFFER TO SELL POWER;

(e) **ANNEXURE E** – ARTICLES AND MEMORANDUM OF ASSOCIATION OF THE PROJECT COMPANY; and

(f) **ANNEXURE F** – EPC TERMS & ARRANGEMENTS.

4.13.2 Additionally, the following have been attached as part of the Tariff Petition:

(a) Board Resolution of the Project Company;

(b) Affidavits of Mr. Naveed Malik and Mr. Nauman Mirza;

(c) Bank Draft No. 1805234 dated 29th August, 2011 amounting to PKR 440,864/- (Pakistani Rupees Four Hundred Forty Thousand Eight Hundred and Sixty Four) as requisite fee for the Tariff Petition, as communicated by NEPRA.

4.13.3 Additional information, to the extent available, will be submitted by the Project Company, if required by NEPRA.

4.13.4 This Tariff Petition is submitted in triplicate, together with the requisite fee.

4.13.5 Simultaneously with the submission of the Tariff Petition, the Project Company has also filed the Generation License application with NEPRA.

BASED ON THOROUGH ANALYSIS of the national electricity generation structure, the existing available power generation technologies and the existing infrastructure and in light

of the Project Company's engagement of one of the world's best contractors for the construction, operation and maintenance of the Facility, it is highly anticipated that the Project will be one of the most competitive Wind IPPs in Pakistan.

5. TOTAL PROJECT COST & INVESTMENT

5.1 TOTAL PROJECT COST SUMMARY

5.1.1 The Total Project Cost, expressed in United States Dollars, has been calculated after thorough analysis, evaluation and understanding of the dynamics that affect the development and operation of a wind farm. The reference exchange rates used to convert the relevant costs into United States Dollars are USD 1 = PKR 87.80.

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

SR. NO.	INVESTMENT / COST	USD IN THOUSANDS
1.	EPC COST	109,327.93
2.	NON EPC COST	1,712.00
3.	PROJECT DEVELOPMENT COST	3,700.00
4.	LAND COST	88.00
5.	TAXES & CUSTOM DUTY	780.30
6.	PRE-COD INSURANCE COST	1,475.93
7.	FINANCIAL CHARGES	3,522.99
8.	ECA / SINOSURE	4,420.66
9.	INTEREST DURING CONSTRUCTION	7,652.19
10.	WORKING CAPITAL	997.00
	TOTAL PROJECT COST	**133,677.00**

5.2 DETAILS OF TOTAL PROJECT COST

5.2.1 EPC Cost

The EPC Cost includes the turnkey price (the **EPC Price**) being charged by the EPC Contractors for the Project. Considering Pakistan's credit ratings and recent political and economic situation in the country, the EPC Contractors require that all payments relating to the offshore component of the EPC Price are secured through a letter of credit (the **L/C**) that is confirmed through an international bank. The confirmation charges @ 2.00% of the L/C are hence also included in the EPC Cost.

Break-up of the EPC Cost is provided below:

SR. NO.	COST HEAD (IN THOUSANDS)	TOTAL (IN EQUIVALENT USD)
1	OFFSHORE AGREEMENT	91,800.00
2	ONSHORE AGREEMENT	16,200.00
3	L/C CONFIRMATION CHARGES	1,327.93
TOTAL EPC COST		**109,327.93**

The EPC Cost represents the cost of 33 (thirty three) GE 1.5XLE WTGs, 99 (ninety nine) blades (40.3m length), electrical equipment, together with ancillary

equipment and other goods, systems and machinery and includes the cost of, *inter alia*, the erection, testing, completion and commissioning of the equipment and construction of the Facility. The EPC Cost is payable by the Project Company to the EPC Contractors based on achievement of various milestones by the EPC Contractors in terms of the EPC Terms & Arrangements.

The EPC Price agreed with the EPC Contractors is exclusive of the custom duties and import taxes. However, the withholding tax payable on onshore component of EPC Price (i.e. amounts payable under the Onshore Agreement) is included.

5.2.2 **Non EPC Cost**

The Non EPC Cost includes the cost of items that are not part of the EPC Contractors' scope of work. Such costs mainly include, inter alia, the costs of:

SR. NO.	COST	USD IN THOUSANDS
1.	FIXED ASSETS	479.88
2.	PROJECT ADMINISTRATION OFFICE COST	341.10
3.	COST OF ACCOMMODATION	259.39
3.	SECURITY FOR EXPATS	307.38
4.	DATA CONNECTIVITY WITH POWER PURCHASER	324.24
	TOTAL NON-EPC COST	**1,712.00**

(a) Fixed Assets

This includes cost of various instruments, equipment and other assets (excluding such assets that are supplied by the EPC Contractors) that include wind measurement mast, vehicles, furniture and fixtures and telecommunication equipment.

(b) Project Administration Office Costs

The Project Company's head office is based out of Karachi. This office is required to maintain coordination with the Project Company's Lenders, shareholders, power purchaser and various governmental agencies. The Project Company will also maintain a Project coordination office with limited accommodation at Site to coordinate the construction and monitoring activities at Site. This portion of the Non EPC Cost includes costs associated with rent, utilities, equipment inspection, vehicles fuel and maintenance and other allied expenses during the construction period.

(c) Cost of Accommodation:

The Project Company will maintain limited accommodation for its out of town staff and personnel at Karachi to coordinate the construction and monitoring activities at the Site. This portion of the Non EPC Cost includes costs associated with rent, utilities, equipment inspection, vehicles fuel & maintenance, and other allied expenses during the construction period.

Accommodation cost also includes the construction cost of a residential facility for providing housing to the O&M staff. A '*fit for purpose*' residential facility has been planned at the Project's Site to accommodate necessary staff. This facility is not intended to cater for the families of the O&M staff.

(d) Site Security

One of the critical points discussed during negotiation of the EPC Terms & Arrangements has been the security situation in Pakistan. The EPC Contractors require security for the personnel engaged by them for the Project. The cost aforementioned in the table set out in this Section 5.2.2 (*Non EPC Cost*) refers to the expenses to be incurred by the Project Company for security arrangements.

(e) Data Connectivity

These costs include the cost of data connectivity with the Power Purchaser, as required pursuant to the terms of the EPA. These costs include the expenses to be incurred for procurement and installation various equipments, materials etc relating to data connectivity with the Power Purchaser.

5.2.3 **Land Cost**

Land lease costs (as paid to date) along with land demarcation costs and right of way of land for the Project together with stamp duty, registration fees, and cost of survey have been accounted under this head.

5.2.4 **Project Development Cost**

It is important to highlight that the First LOI for the Project was issued in 2005 and the Project has been under development for over 6 years. Due to, inter alia, the deteriorating security and financial condition of the country; delay in development of standardized off-take, concession and security documents by the stakeholders; delays in allocation of land to the Project Company and other reasons beyond the control of the Sponsor and the Project Company, it has taken considerable time in firming up the EPC Terms & Arrangements for execution of the Project on a fixed price, turn-key basis.

The Project Development Cost includes the costs incurred for the purpose of Project development and includes all costs, fees and expenses incurred or to be incurred for such purpose. These costs include, *inter alia*, costs of feasibility studies, topographical survey of land, preliminary geotechnical investigation of land, wind resource study, environment study, hydrographic studies, grid interconnection and other studies; fees of Project consultants/advisors; 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 and costs relating to various permits for the Project.

The Project Company has engaged highly reputed and leading consultants as Project advisors that have unmatched expertise in planning, engineering, financial,

legal and technical matters. Considering that the Project will be one of the first Wind IPPs in Pakistan, the Project Company has endeavored to put together the best team of consultants for the Project so as to ensure that wind power sector in the country is developed and the Project is bankable from all aspects.

A high level break-up of the various costs included under this head is given below:

SR. NO.	COST	USD IN THOUSANDS
1.	PROJECT FEASIBILITY STUDIES AND COST OF PROJECT CONSULTANTS	1,279.47
2.	PERMITS, LICENSES, FEES FOR COMPANY FORMATION AND LOS PG TO AEDB	319.87
3.	HR COSTS	936.34
4.	TRAVELLING EXPENSES	358.25
5.	FINANCIAL AND LEGAL ADVISERS (INCLUDING AEDB LEGAL COUNSEL FEES)	806.07
	TOTAL PROJECT DEVELOPMENT COST	**3,700.00**

5.2.5 **Taxes & Custom Duty**

(a) Custom Duty

Rules regarding customs duty on renewable energy projects are driven based on the information provided under the RE Policy 2006, Wind Tariff Guidelines 2006 and the Government of Pakistan, Federal Board of Revenue Statutory Regulatory Order (SRO) No. 575(I)/2006 dated June 05, 2006 (the **SRO No. 575(I)/2006**).

Following table highlights and summarizes the fiscal incentives/exemption available to renewable energy based power Projects regarding customs duty:

Fiscal Incentives/Exemptions on RE Based Power Projects

RE Policy 2006	**Wind Tariff Guidelines 2006**	**SRO No. 575(I)/2006**
Extract fro m Para 8.6.1 No customs duty or sales tax for machinery equipment and spares (including construction machinery, equipment and specialized vehicles imported on temporary basis) meant for initial installation or for balancing,	**Extract from Fiscal Regime** Customs duty at the rate of 5% on the import of plant and equipment not manufactured locally	**Extract from Para 11 (5% customs duty)** Machinery, equipment and spares meant for initial installation, balancing, modernization, replacement or expansion of Projects for power generation through oil, gas, coal, wind and wave energy including under construction Projects, which entered into an implementation agreement with the Government of

modernization, maintenance, replacement, or expansion after commissioning of Projects for power generation utilizing renewable energy resources (specifically, small hydro, wind, and solar), subject to fulfillment of conditions under the relevant SRO		Pakistan **Para 13 (0% customs duty)** Machinery, equipment and spares for initial installation, balancing, modernization, replacement or expansion of Projects for power generation through nuclear and renewable energy sources like solar, wind, micro-hydel bio energy, ocean, waste-to-energy and hydrogen cell etc.

It transpires that the above-stated three documents (i.e. the RE Policy 2006, the Wind Tariff Guidelines 2006 and the SRO No. 575(I)/2006), when read in conjunction, give rise to an ambiguous situation whereby the RE Policy 2006 provides for Nil customs duty, the Wind Tariff Guidelines 2006 provide for a 5% customs duty, and the SRO No. 575(I)/2006) has both Nil and 5% customs duty rate.

The Project Company has assumed 0% customs duty regarding imported plant, equipment, machinery etc. in accordance with para 13 of the SRO No. 575(I)/2006) read with the RE Policy 2006.

However, as the Wind Tariff Guidelines 2006 and para 11 of the SRO No. 575(I)/2006) provide a 5% customs duty rate, in view of this apparent ambiguity the Project Company submits to NEPRA to allow adjustment at COD of Total Project Cost of the Project and the Reference Generation Tariff, in each case, for actual customs duty paid.

(b) Special Excise Duty

Special Excise Duty is assumed at 0%, as the same is correlated with the rate of customs duty (assumed at 0.00%). In case the Project Company has to pay 5% customs duty (in the event the customs authorities bring the import under the ambit of para 11 of the SRO No. 575(I)/2006), then the Special Excise Duty at 1.00% is leviable. Accordingly, the Project Company submits before NEPRA to allow adjustment at COD of the Total Project Cost of the Project and the Reference Generation Tariff, in each case, for actual customs duty paid and Special Excise Duty paid.

(c) Sales Tax

No Sales Tax is assumed on import and local supply of the imported plant, equipment, and machinery etc., based upon the SRO No. 575(I)/2006 and recent Notification SRO 575(I)/2005 issued by the Government of Pakistan, Federal Board of Revenue.

Furthermore, for the purpose of this Tariff Petition, the Project Company has not taken into account the impact (if any) of the enactment of the Sindh Sales Tax on Services Act, 2011. As the law has only very recently been enacted, the

true implications and procedures on applicability are not clear at this time. However, in case the Onshore Agreement forming part of the EPC Terms & Arrangements (being services performed in the province of Sindh) is brought into the ambit of the Sindh Sales Tax on Services Act, 2011, it is submitted before NEPRA that the tax charged to the Project be allowed as a pass-through at the time of tariff true-up.

(d) Income Tax

Advance Income Tax at 0.00% (Zero Percent) has been assumed at the time of import of machinery, equipment, goods, spares and materials for the Project.

(e) Sindh Infrastructure Development Surcharge (SIDS)

0.85% of the imports for the Project have been assumed as Sindh Infrastructure Development Surcharge (the **SIDS**). The chargeability of SIDS is based on the weight of the imported equipment / items and the distance of the Site from the port. Since the imported equipment is expected to be of haulage load and has to travel considerable distance from the port, maximum rate of SIDS has been assumed in the Total Project Cost.

(f) Federal Excise Duty

Federal Excise Duty (the **FED**) on the payments to be made to (1) local financial institutions; and (2) insurer's, in each case, has not been assumed. In case FED is levied on the financial advisors and lead arrangers' fee, Debt arrangement fee and commitment fee, L/C commission and charges, loan administration charges and insurance premium, the same should be treated as pass-through under the tariff.

Further, it is submitted before NEPRA that in case any taxes (customs duty/sales tax/income tax etc.) are levied contrary to above, the same should be reimbursed to the Project Company on the basis of actual levy at the time of COD.

5.2.6 Pre-COD Insurance Cost

Pre-COD Insurance Cost covers the insurance cost of Project Company's assets during construction and the same are incurred prior to COD. These cost estimates have been developed based on an offer received from one of the leading insurance companies in Pakistan.

The Project Company, in view of the practices set by other IPPs in Pakistan and in accordance with the requirements 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; and
(f) Comprehensive General Liability.

The premiums payable under the above stated Pre-COD insurances does not include the administrative surcharge, the Federal Insurance Fee and the Federal Excise Duty, in each case, relating to the Pre-COD insurances and the Project Company submits that the same be allowed by NEPRA as part of the one-time adjustments allowed at the time of COD.

5.2.7 ECA / Sinosure Fee

An export credit agency or investment insurance agency (the **ECA**) is a private or quasi-governmental institution that acts as an intermediary between national governments and exporters to issue export financing. The financing can take the form of credits (financial support) or credit insurance and guarantees (pure cover) or both. ECAs can also offer credit or cover on their own account.

The ECAs' main objective is to underwrite the commercial and political risks of investments in overseas markets that are typically deemed to be high risk – such as Pakistan. Investment insurance is intended to provide the insured with risk guarantee when they suffer economic losses because of war, currency exchange ban, requisition, or breach of contract by the government in countries where the insured have made investments.

Due to the current social and economic scenario prevalent in Pakistan, it is expected that the rate for arrangement of investment insurance for Debt would be 6.53% of the Foreign Lenders' exposure. The expected rate is based on the tariff petition filed by Three Gorges First Wind Farm Pakistan (Private) Limited (**TGFWF**) as TGFWF have already arranged investment insurance for their foreign sourced financing. The fee charged by the investment insurance agency is expected to be paid upfront and shall provide coverage for the entire term of the Foreign Lenders exposure in the Project.

It is pertinent to highlight that the cost of obtaining investment insurance has only been charged on the Foreign Financing to be arranged for the Project as such insurances are a requirement for foreign financial institutions providing financing to projects operating in Pakistan (or other high risk locations outside their country of operation). Furthermore, in case the Project Company is able to obtain investment insurance at a cost lower than 6.53%, the same will be intimated to NEPRA at the time of achievement of financial close so that it is accordingly reflected in the tariff awarded to the Project Company.

5.2.8 Financial Charges

Financial Charges include the costs related to the Debt financing of the Project. Such costs include, *inter alia*, the Lenders' up-front fee and commitment fee; charges related to various letters of credit to be established in favor of various contracting parties (other than L/C confirmation charges for payments to be made to CMEC as these are included as part of the EPC Cost); 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' various advisors.

The Project Company has had to move towards securing Foreign Financing due to the lack of liquidity prevalent in the local market. The lack of liquidity is primarily attributable to excessive borrowing by the government from the local banking sector to meet its deficits and is further aggravated by the circular debt issue

restricting the banks from recovering loans given to IPPs for development of the power sector under the previous power policy. Further, given the local political, economic, and security scenario prevailing in the country, foreign source financing can only be procured as a package along with associated insurance guarantees providing coverage against these concerns.

The Financial Charges proposed by the Project Company for NEPRA's approval are in excess of 3% (i.e. these are 3.5%) of the total Debt amount, normally allowed by NEPRA for locally financed project. It is submitted before NEPRA that the Financial Charges cap be enhanced for the Project due to the following reasons:

(a) The Project Company understands that NEPRA introduced a Financial Charges cap of '3% of debt amount' for 200 MW thermal projects which had project cost of USD 200 million to USD 300 million. Apart from financial charges quoted as a percentage (%) of the debt/loan amount, all fixed financial charges (agency, trustee, monitoring, supervisory fee along with Lenders' advisors fee) were distributed over a debt of USD 150 million to USD 225 million – thus resulting in the financial charges being lower than the NEPRA introduced cap. In the case of wind power projects of 50 MW however, since the debt component is much smaller, the cap applied for financial charges by NEPRA is easily breached and therefore unrealistic.

(b) The Project Company has included a foreign currency loan (i.e. Foreign Financing) in its capital structure in order to reduce the levelized tariff in comparison to the option of borrowing in local currency only. While the selection of a mix of Foreign Financing and Local Financing by the Project Company has resulted in the reduction of its levelized Reference Generation Tariff due to a lower cost of Foreign Financing borrowing, it is highlighted that the arrangement and commitment fees of Foreign Financing is significantly higher than that of the Local Financing (as is the case customarily) and has resulted in higher Financial Charges. Thus, while considering the low carrying cost and reduced levelized tariff resulting from the Project Company's selection of a mix of Local Financing and Foreign Financing, it is submitted that Financial Charges should not be capped and should be allowed at actuals, as the Project Company understands that the intention of NEPRA has been to ensure the lowest consumer tariff rather than preserving the sanctity of a mere cap itself.

(c) Additionally, it is submitted that there are a few precedents available in NEPRA's determination of financial charges cap for other IPPs (i.e. Laraib and Uch-II) where the financial charges were approved by NEPRA in excess of 3% of the debt amount. It is pertinent to highlight that in the case of Uch-II, NEPRA has, based on genuine concerns raised by the petitioner, allowed true-up of financial charges at the time of achievement of financial close thereby providing support to the petitioner in arrangement of financing.

Considering NEPRA's approval of the financial charges for the aforestated precedents, it is submitted before NEPRA that Financial Charges proposed by the Project Company (at 3.5% of the Debt arranged) be favorably granted and allowed.

5.2.9 **Working Capital**

Inflow of Funds During Operating Period:

Under the terms of the EPA to be executed between the Project Company and the Power Purchaser, the Project Company shall invoice the Power Purchaser for the settlement of the Monthly Energy Payment on or after the first day of the month following the month to which the Monthly Energy Payment relates. The Power Purchaser has to make the payment of the same by the thirtieth day following the day of submission of the invoice i.e. 31st day.

Outflow of Funds & Requirement for Working Capital:

(a) The Project Company is required to collect sales tax from the Power Purchaser on behalf of the Government of Pakistan and deposit the same by the 25th day of the month to which it relates. However, as explained above, the Power Purchaser is only obligated to make payment to the Project Company against the invoice raised within 30 days from the date of invoice – thus creating an inherent mismatch in the availability of cash flows to the Project Company for settlement of its liabilities.

(b) Furthermore, the Project Company would be making payments to the O&M Contractors monthly 15 days in arrears whereas the same will be recovered from the Power Purchaser 30 days in arrears – thus creating a mismatch in cash flows and providing a further justification for Working Capital.

(c) The terms of Debt financing stipulate repayment of Debt on semi-annual basis commencing from COD. By the time the first repayment is to be made to the Lenders, the Project Company would only have received 5 months of revenue in accordance with the 30-day payment terms under the EPA. Thus a permanent shortfall of 1/6th of the debt installment would be created which the Project Company intends to fund through upfront permanent working capital – this requirement is standard in all financing transactions of this type.

(d) Finally, given the current economic situation in the country and the problem of circular debt faced by the economy, it is highlighted before NEPRA that the Power Purchaser is presently delayed in making its payments to the IPPs (such delays amounting to months in aggregate in case of some IPPs), which has created substantial difficulties for such IPPs and has even caused some of them to default under their various contractual arrangements. Approval of a Working Capital in the Total Project Cost by NEPRA for the Project Company will not only help the Project Company in management of its cash flows but will also reduce its default risks emanating from the considerable lags in the receipt of payments from the Power Purchaser.

In consideration of NEPRA's views on commercial working capital lines, which have been disallowed to earlier projects, it is submitted that such permanent Working Capital be allowed to be injected upfront by the Project Company in replacement of a revolving credit line from banks.

5.2.10 **Interest During Construction**

Keeping in view the liquidity crunch prevailing in the local financial markets (caused due to excessive borrowing by the federal government) and the global economic scenario (over shadowed by the recent credit rating downgrade of the United States resulting in one the longest recessions in recorded history), the Project Company submits before NEPRA that the tariff be adjusted at financial close on the basis of actual '*Cost of Funds*' and Debt mix i.e. proportion of Local Financing: Foreign Financing. In this regard it is pertinent to highlight that Uch-II Power (Pvt.) Ltd. had requested and was subsequently granted adjustment by NEPRA for 'Cost of Funds' on the basis of actual 'Cost of Funds' up to the achievement of **COD**. However, the Project Company is optimistic that such adjustment for 'Cost of Funds' and Debt mix i.e. i.e. proportion of Local Financing: Foreign Financing would only be required for the Project up to achievement of financial close by which time the Debt arrangements would have been finalized.

For the purpose of this Tariff Petition, the Interest During Construction (the **IDC**) has been estimated on the basis of the terms expected to be offered by potential Lenders to the Project. Base rate equal to 6-month KIBOR plus a margin of 300 basis points (Local Financing) and 6 months LIBOR plus a margin of 500 basis points (inclusive of ADB REDSIP Facility Fee) (Foreign Financing) have been assumed for the purpose of this Tariff Petition. Actual IDC, however, shall be subject to change depending on the fluctuations in base rate (i.e. 6-month KIBOR & 6-month LIBOR), funding requirement (draw-downs) of the Project Company during the construction period, changes in Total Project Cost including changes due to Taxes and Duties and variations in PKR / USD exchange rate.

COST OF FUNDS FOR TARIFF PETITION (SUBJECT TO ADJUSTMENT AT ACTUAL AT FINANCIAL CLOSE)	6 – MONTH KIBOR	6 – MONTH LIBOR
BASE RATE	13.38%	0.48%
SPREAD	3.00%	5.00% (inclusive of ADB REDSIP Facility Fee)
TOTAL INTEREST RATE	**16.38%**	**5.48%**

IDC, at this stage, is an estimated figure, which is adjustable:

(i) at financial close based on actual 'Cost of Funds' and Debt mix (i.e. Local Financing: Foreign Financing);

(ii) at COD based on actual timing and amount of Debt drawdown during the Project construction period after financial close,

and it is therefore submitted that NEPRA allow adjustments for the same.

5.3 PROJECT FUNDING

5.3.1 The Funding Arrangement

The Total Project Cost will be funded on the basis of a Debt: Equity ratio of 75:25, thereby resulting in the following capital structure for the Project:

	'MILLION USD
DEBT	100.257
EQUITY	33.419
TOTAL PROJECT COST	133.677

It is highlighted that the above debt mix is based on the proportion of Local Financing and Foreign Financing expected to be arranged for the Project. The Project Company requests NEPRA to allow adjustment in said Debt mix (Local Financing : Foreign Financing) based on actuals along with adjustment for actual 'Cost of Funds' at the time of achievement of financial close (reasons for the same have been detailed out in Section 5.3.3 and Section 5.2.10).

5.3.2 Equity

(a) Sponsor arrangements For Equity

The Sponsor and investors in the Project Company will be committing 25% of the Total Project Cost as Equity. Based on the current Total Project Cost estimates, the Equity required to be injected by the Sponsor and investors amounts to USD 33.419 million. The Sponsor will subscribe to the amount of the Equity required for the Project from time to time.

(b) Return on Equity

Based on NEPRA's recent tariff determinations for Wind IPPs, the Project Company proposes a **ROE and ROEDC of 17.00%, net of 7.5% withholding tax on dividends**.

(c) Return on Equity during Construction

As per the RE Policy 2006, Wind IPPs are allowed to claim return during the term of the Implementation Agreement commencing from the start date of construction i.e. the date from which payments are made to the EPC Contractors. Therefore, the Return on Equity during Construction (**ROE DC**) will be accrued and shall be determined at actual at the time of COD based on the actual equity drawdown.

The ROE DC has not been estimated separately in this Tariff Petition and the same shall form part of Reference Generation Tariff true-up calculations at COD on the basis of actual Equity drawdowns.

Actual ROE and ROEDC, however, shall be subject to change depending on actual funding drawdown during the construction period, changes in Total Project Cost

including changes due to Taxes and Duties, variations in PKR / USD exchange rate and interest rate fluctuation.

5.3.3 **Debt Financing**

The capital structure of the Project Company is envisaged at 75:25 (Debt: Equity). It is expected that the Debt will be secured from both Local Lenders and Foreign Lender on 50:50 basis. It is highlighted that the afore stated Debt mix is based on the proportion of Local Financing and Foreign Financing **expected** to be arranged for the Project.

The Project Company has had to move towards securing foreign source financing due to the lack of liquidity prevalent in the local market. The lack of liquidity is primarily attributable to excessive borrowing by the government from the local banking sector to meet its deficits and is further aggravated by the circular debt issue restricting the banks from recovering loans given to IPPs for development of the power sector under the previous power policy. Further, given the local political, economic, and security scenario prevailing in the country, foreign source financing can only be procured as a package along with associated insurance guarantees providing coverage against these concerns.

Due to the uncertainties associated with regards to arrangement of Debt financing prevailing at the time of filing of the Tariff Petition, the Project Company submits to NEPRA to allow adjustment in (1) the debt mix (i.e. Local Financing: Foreign Financing); and (2) 'Cost of Funds', in each case, based on actuals at the time of achievement of financial close.

The tenor of the Debt will be 10 year plus 2 year Grace Period. For the purpose of the Tariff Petition, the Foreign Financing is based on 6-month LIBOR plus a margin of 5.00% (inclusive of ADB REDSIP Facility Fee) adjustable on semi-annual basis, subject to adjustment at COD based on actual 'Cost of Funds' as detailed in Section 5.2.10 (Interest During Construction), whereas the Local Financing is based on 6-month KIBOR, plus a margin of 3.00%, also adjustable on semi-annual basis.

Terms of Debt Financing

The following terms for financing the Debt portion of the Total Project Cost are expected to be obtained by the Project Company from the Local Lenders and Foreign Lenders:

Sr. No.	Cost Head		USD in '000
1	Total Project Cost		133.677
2	Total Value of Debt @ 75% of Total Project Cost		100.257
		6-month LIBOR	*6- month KIBOR*
3	Base Rate	0.48%	13.38%
4	Spread	5.00% (inclusive of ADB REDSIP Facility Fee)	3.00%
5	Debt Markup	5.48%	16.38%
6	Debt Tenure (door-to-door)		12 years
7	Grace Period		24 months
8	Re-Payment Schedule		Semi-Annual

** - reasons for requesting 6-month KIBOR / LIBOR are provided below.*

As per the Wind Tariff Guidelines 2006, if a wind power developer is able to obtain financing at a cost lower than KIBOR plus 300 basis points, the benefits from the reduction in debt servicing costs are to be shared on a 60:40 ratio between the Power Purchaser and the wind power developer. Thus, in case the Project Company is able to obtain financing at a rate below 300 basis points, it is requested that NEPRA allows the Project Company to claim the benefits due to the Project Company in accordance with the aforementioned guidelines. Similarly, in the event the Project Company is able to procure Foreign Financing at a cost lower than LIBOR plus 500 basis points, it is submitted that NEPRA allows sharing of the benefits of such reduction between the Power Purchaser and the Project Company on a 60:40 basis ratio.

Debt financing to be provided by the Lenders is provided below:

	'MILLION USD
LOCAL LENDERS	50.129
FOREIGN LENDERS	50.129
TOTAL DEBT	**100.257**

(a) Terms for Foreign Financing

BASE RATE	6 Month LIBOR
MARGIN	5.00% (inclusive of ADB REDSIP Facility Fee) subject to adjustment at actual at the time of achievement of COD
REPAYMENTS	20 consecutive semi-annual repayments
GRACE PERIOD	2 years
FINANCIAL CHARGES	3.5% of the total Foreign Financing
ECA / SINOSURE FEE	ECA coverage to cover the Political risk
ADB REDSIP GUARANTEE FACILITY	Commercial Risk coverage by ADB REDSIP Guarantee to tune of 100 bps

(b) Terms for Local Financing

BASE RATE	3 Month KIBOR
MARGIN	3% of the total Local Financing
REPAYMENTS	20 consecutive semi-annual repayments
GRACE PERIOD	2 years
FINANCIAL CHARGES	3.5% of total Local Financing

Asian Development Bank – The REDSIP Guarantee Facility

In view of the difficulties being faced by Renewable Energy Independent Power Project (the **REIPPs**) developers in arrangement of debt financing for implementation of their projects, Asian Development Bank (the **ADB**), in cooperation with the Government of Pakistan (through the AEDB) has agreed to offer a guarantee facility (i.e. the Renewable Energy Development Sector Investment Program Guarantee Facility, (the **ADB REDSIP Guarantee Facility**)) to interested and eligible REIPPs.

Under the ADB REDSIP Guarantee Facility, ADB will provide coverage to the lenders of the REIPP, at a nominal fee (the **ADB REDSIP Facility Fee**), against non-payment by the REIPPs of up to 100% of the scheduled debt service payment (principal plus interest) which is solely a result of non-payment by the National Transmission and Dispatch Company (or any other power purchaser supported by the GOP and acceptable to ADB) of amounts due under the REIPPs energy purchase agreement for energy delivered or energy that could have been delivered.

As the ADB REDSIP Guarantee Facility can be used to provide coverage against loans provided by local and / or foreign banks, thereby ensuring that the cash flows required for making debt service payments are appropriately managed. Foreign Lenders require the Project Company to avail the ADB REDSIP Guarantee Facility as a prerequisite to their financing of the Project. Therefore, in respect of the Foreign Financing of the Project, the markup fee for ADB REDSIP Guarantee Facility is included in the spread markup over the base rate.

Due to the current state of circular debt issue in Pakistan, the ADB REDSIP Facility Fee for procuring the ADB REDSIP Guarantee Facility is approximately 100 bps and will be applicable on the outstanding balance of debt plus accrued interest throughout the term of the debt.

Reason for using 6-month LIBOR / KIBOR

The 6-month LIBOR and 6-month KIBOR has been used as the revenues of a Wind IPP are dependent on monthly energy produced - as monthly energy is dependent on the monthly wind speed, which in turn is subject to several variations, i.e. high revenues during high wind months and low revenue during low wind months. The debt servicing capability of the Project Company is severally hampered due to this variation in revenue generation capabilities of the Project. The Project Company has opted for the 6-month LIBOR and 6-month KIBOR as the same would allow the Project Company to equalize the monthly cash flows of the Project Company for meeting all the cost requirements of the Project.

6. OPERATIONS & MAINTENANCE COST

6.1 UNDERSTANDING & BENCHMARKS

O&M expenses are one of the major unknowns for wind power developers in Pakistan. To date, no Wind IPP has achieved COD in Pakistan. It is important to note that O&M costs for wind power projects are not as low as perceived by many in Pakistan. Today's modern wind turbines are built from over 8,000 different components. Furthermore, unexpected components failure, especially electronic controls, generators, rotor blades etc. have, over the years, driven up O&M costs. This is even more critical in Pakistan where the high wind season is accompanied by high temperature months and the WTGs have to work at almost full capacity in extreme weather.

To substantiate the above data; the latest research report on O&M costs "THE WIND ENERGY OPERATIONS & MAINTENANCE REPORT 2011" (the **Wind O&M Report 2011**) states that true O&M costs of the wind industry are clouded in the world due to the fact that the majority of currently installed wind power capacity is only now coming out of warranty. No manufacturer is willing to share its actual O&M costs in the warranty periods. To give an idea to NEPRA, as per the Wind O&M report 2011, about 79 percent of the turbines in the world were under warranty up till June 2009. Therefore, it is difficult to get the real O&M costs for wind industry. The Wind O&M Report 2011 also suggests that real-time O&M costs are far higher than originally projected in US - which is now one of the largest wind power markets. The Wind O&M Report 2011 also indicates un-predicted component failure of WTGs as one of the key issues which escalates the O&M costs.

According to the research in the Wind O&M Report 2011, O&M costs are, on an annual basis, around 3 percent of the total project cost as opposed to the initial estimate of one percent.

In the last 5 years, large wind turbines are being developed with lower cut-in wind speed in order to increase their power production and to drive down the cost of electricity. This trend in wind turbine size escalation has come with increased uncertainty regarding O&M activities. The fact that O&M costs for wind power projects tend to increase overtime has also been supported by the findings recently released by the European Wind Energy Association in their report titled: *The Economics of Wind Energy*.

In view of the foregoing, the O&M costs suggested in the Tariff Petition are clearly well within international benchmarks. It is therefore submitted before NEPRA that the O&M costs presented below are be allowed by NEPRA in order to ensure smooth, efficient, and effective operation of the Project.

6.2 SUMMARY OF OPERATIONS & MAINTENANCE COSTS

The operations and maintenance costs of the Project Company (the **Operations & Maintenance Costs**) comprises of the operations and maintenance cost and the cost of the operational insurances to be taken out by the Project Company. Break-up of the Operations & Maintenance Costs is provided hereunder:

	USD IN THOUSANDS (PER ANNUM)		
	YEAR 1-2	YEAR 3-10	YEAR 11-20
O&M OUTSOURCED COST	1,075	2,500	2,750
FIXED ASSETS	47.67	60.71	85.00
PAYROLL & ALLIED EXPENSES	268.13	333.93	425.00
VEHICLES FUEL AND MAINTENANCE	29.79	36.43	60.71
LAND LEASE PAYABLE TO AEDB	-	-	42.50
OTHER ADMINISTRATIVE COSTS	190.67	236.79	236.79
LENDER RELATED COSTS	89.38	91.07	-
DSRA SBLC COST	89.38	91.07	-
INSURANCE COST	1,080	1,080	1,080
TOTAL OPERATING COST	**2,870**	**4,430**	**4,680**

6.2.1 O&M Outsourced Cost

The O&M Outsourced Cost provided above are based on the price agreed with CERIEC for the O&M of the Facility for the initial two years and with GE Wind Energy and General Electric International Inc. for the O&M of the Facility for the next eight years. The prices agreed include the costs associated with scheduled maintenance, routine maintenance, services required for unscheduled maintenance and any spare parts and consumables required for carrying out the scheduled and routine maintenance. During the initial two year period, costs of all unscheduled spare parts will also be borne by EPC Contractors and CERIEC (as the O&M Contractor). These costs are denominated in US Dollars.

The variation in the O&M Outsourced Costs during the initial two year period and thereafter is due to the O&M being carried out by the EPC Contractors as part of their warranty obligations during the initial period, which includes the replacement of the spare parts.

Upon completion of the 10 year O&M period (during which the O&M Contractor will be responsible for carrying out the O&M activities), the Project Company will carry out a cost and benefit analysis of carrying out the O&M themselves or again outsourcing the same to the O&M contractor. The decision to either carry out the O&M function in-house or through an external source will depend on a number of factors including: level of development of the local wind industry; availability of critical spare parts in the secondary market; presence of skilled manpower in the local market; presence of large cranes able to lift heavy components at heights of over 80 meters and above, etc. The Project Company optimistically estimates the cost of carrying out or out-sourcing the entire O&M function of the Project to cost approximately 10% higher than the cost for the period from year 3 to year 10. This estimate is based on the fact that the entire equipment of the Facility (including the WTG's, electrical and civil works) would require considerably higher costs to maintain than during the initial 10 years and the increase would compensate for the additional costs envisaged during the later life of the Facility.

6.2.2 Fixed Assets

The Fixed Assets cost includes costs associated with vehicles required at Site; tools and inspection equipment for inspection of the energy equipment; and furniture and fixtures required for the offices to be maintained at Site and Karachi. The location of the Project will require jeeps and special purpose vehicles required for travel to and within the Site. These are more expensive than regular cars and also will require more frequent replacements.

6.2.3 Payroll & Allied Expenses

This includes the costs related to salaries and benefits of all staff (administrative, operational and security) employed by the Project Company. Since this is one of the first projects of its type in the country, the Project Company will be employing a highly skilled and technically proficient team to manage all aspects of the Project including individuals from the international pool of wind energy professionals to ensure that all key technical and commercial interests of all stakeholders are maintained and protected. Security and protection of people and assets spread over such a large geographic area is a key concern – especially with a foreign O&M contractor. It is in the best interests of the Project and the image of Pakistan that the best comfort and protection is provided to the teams working on Site and that protection is also provided to assets spread over thousands of acres without any protective boundary walls.

6.2.4 Vehicles Fuel and Maintenance

This component includes the costs associated with the running and maintenance of vehicles at the offices of the Project Company. The vehicles include the vehicles required by the security personnel for securing the Site and vehicles required for office use at Karachi offices.

6.2.5 Land Lease Cost Payable to AEDB

The lease rentals payable to AEDB for the first 10 years have, in accordance with the requirements laid forth by AEDB, paid in advance. These form part of the Total Project Cost mentioned in Section 5.2.3 above. In case the lease rentals that have been paid in advance (as explained in the preceding sentence) are excluded from the Total Project Cost by NEPRA while determining the tariff, it is submitted that the same be amortized during the first 10 years of operation in order to ensure that the cost is reimbursed to the Project Company.

Furthermore, at the commencement of the 11th year of operations, the Project Company will be required to pay (to AEDB) lease rentals @ PKR 2,000 per acre per annum for the remaining term of the Project (i.e. 10 years) in advance. The cost set out against this head is to cater for the cost of the lease rentals that will need to be paid to AEDB by the Project for the remaining term. It is pertinent to mention that even though the Project will be required to pay the cost for the entire 10 year period in advance, the Project Company has accepted that the same will be settled by the Power Purchaser through monthly energy payments over the 10 year period.

6.2.6 Other Administrative Costs

This cost component includes (but is not limited to) other administrative costs such as phone bills, travelling, rents and utilities, printing and stationary, audit fees, generation license fees and costs relating to kidnap and ransom policies required for the administrative staff and employees at Site of the Project Company.

6.2.7 Lender Related Costs

Under the Debt financing arrangements, the Project Company is required to pay the Lenders various fees for monitoring and coordinating activities including agency fee, monitoring fee and security trustee fee that are in line with common market practices. Further, due to the involvement of Foreign Lenders, an annual technical review of the Project's operations would be mandatory, the cost of which has also been included under this head.

6.2.8 Letter of Credit for Debt Service Reserve Account (DSRA)

Internationally as well as locally, infrastructure projects such as the Project are typically financed through an arrangement termed as "PROJECT FINANCING". The lenders for such projects determine the viability of such projects based on the projected cash flows of the project rather than the balance sheets of the project sponsors. Usually, a Project Financing structure involves a number of equity investors, as well as a syndicate of banks and financial institutions that provide loans for the project. Such loans are most commonly non-recourse loans, which are secured by the project assets and paid entirely from project cash flow rather than from the general assets or creditworthiness of the project sponsors - a decision in part supported by financial modeling. The financing is typically secured by all of the project assets, including the revenue-producing contracts. Project lenders are given a lien on all of these assets and contracts and are able to assume control of a project if the project company has difficulties complying with the loan terms.

Generally, a special purpose entity (i.e. a project company) is created for each project, thereby shielding other assets owned by a project sponsor from the detrimental effects of a project failure. As a special purpose entity, the project company has no assets other than the project. Capital contribution commitments by the owners of the project company are sometimes necessary to ensure that the project is financially sound.

The mechanism of arrangement of Project Financing, described above, is the theme behind the RE Policy 2006 developed by the Government of Pakistan for inviting interest of the private sector towards power generation. Arrangement of conventional financing would expose the sponsors to unnecessary risks as it would provide the lenders an opportunity to obtain recourse towards other assets of the sponsors.

The Debt to be arranged by the Sponsor of the Project Company is to be structured as a Project Financing transaction under which the cash flows of the Project during the Debt repayment period shall be appropriated based on a waterfall which is usually applied by Lenders i.e. the monthly revenues earned by the Project shall be applied in the order of precedence specified below:

- Payment of interest and principal due for the month shall be secured by the Lenders in a Debt Payment Account;

- Payment of maintenance reserve in accordance with the EPA shall be secured by the Lenders in a Maintenance Reserve Account;

- Payments to be made for operating expenditure shall flow through the Project – the same shall be immediately paid to the relevant creditors i.e. O&M contractors, staff salaries, etc; and

- The payment against ROE and ROE-DC shall be utilized by the Lenders to fund the Debt Service Reserve Account (the **DSRA**).

The DSRA is maintained by the Lenders in Project Financing transactions as a means to secure the Debt service due immediately after the next Debt repayment date. The DSRA provides the Lenders with adequate time to take over the Project in case of default by the Project Company.

The two options available for funding the DSRA are provided below:

- through cash – there are two further sub-options in case this method of funding is chosen by the Lenders:

  (i) upfront funding – funding through equity injection by the Sponsor at the time of COD; or

  (ii) funding through diversion of ROE and ROE-DC cash flows into a DSRA account.

  In either scenario, the Sponsor of the Project Company is unable to avail any return on the amount retained by the Lenders to fulfill the DSRA requirement; or

- through L/C – the Sponsor provides an L/C equivalent to the amount required for funding the DSRA requirement; L/C charges are borne by the Project Company.

The Sponsor and their financial consultants are of the view that the Lenders may be willing to accept securing the DSRA through an L/C. The cost associated with the L/C to be provided to the Lenders for securing the DSRA has been catered for under this account.

If the cost of such L/C is not allowed to the Project Company, the same would result in a reduction of the Sponsor's IRR, which **defies the basic theme behind the RE Policy 2006** that was developed in order to attract private investment into the power sector.

In this regard, the Tariff Standards and Procedures, 1998 (the **NEPRA Rules**), clearly state that the:

> *"tariffs should allow licensees a rate of return which promotes continued reasonable investment..."*

and

> *"tariffs should generally be calculated by including a depreciation charge and a rate of return on the capital investment of each licensee commensurate to that earned by other investments of comparable risk"*

Furthermore, the NEPRA Rules clearly stipulate that the:

> *"tariffs should, to the extent feasible, reflect the full cost of service to consumer groups with similar service requirements"*

It is therefore submitted that the Project Company be allowed to claim the said L/C charges for fulfilling the DSRA funding requirement of the Lenders along with the working capital facility. It is pertinent to mention that NEPRA has in the past allowed projects, for which debt is anticipated to be funded through various international financial institutions (such as US Exim Bank, IFC, ADB, ECA's, and other multilaterals and bilaterals), the interest charged on working capital facility and DSRA L/C. The decision of NEPRA in the case of AES Pakistan (Pvt.) Ltd. with regards to the request by AES for arrangement of working capital facility and DSRA L/C is reproduced below:

> *"...The Authority has, however, in the cases of other IPPs who obtained funds from accredited IFIs and not from commercial banks allowed other financial charges such as DSRA L/C charges and agency fees, etc. The Authority, in the instant case, keeping in view the size of the project and funding required, understands that the Petitioner will have to obtain funding from IFIs such as US Exim Bank and IFC, etc. In view thereof, the Authority has decided to accept the Petitioner's request, subject to provision of verifiable documentary evidence."*

A similar view was taken by NEPRA in the case of tariff determination of Uch-II Power (Private) Limited. Taking into account the decision taken by NEPRA in the determination awarded to AES and Uch-II, and the similarity between the AES and Uch-II projects and the Project with regards to the sources of debt funding, it is reasonable for the Project Company to request for the working capital facility and interest cost on DSRA L/C to be allowed to the Project Company against provision of actual documentary evidence.

Alternatively, the Project Company shall be forced to fund the DSRA through cash (on a 75:25 debt: equity basis), which will result in an increase in Total Project Cost of the Project. This increase in equity will ultimately result in a higher tariff, which will be to the detriment of the consumers.

6.2.9 Insurance Costs

The Insurance Cost component consists of all-risk insurance/reinsurance for the Project, as well as business-interruption insurance (which is a Lender-stipulated requirement). As machinery breakdown, natural calamities (such as earthquakes), sabotage and consequential business interruption are the biggest threat to the Facility and the Project Company, it is imperative that all aspects of the risk are covered adequately and no compromise is made in this respect. As is the common practice in project financing lending throughout the world, a comprehensive operational insurance and reinsurance arrangement is fundamental to the bankability of the Project.

The insurance expense for the Project during its operational phase is expected to be denominated in foreign currency i.e. United States Dollars. The rationale for such assumed foreign currency cost structure is as follows:

(a) Pakistan's insurance & reinsurance industry does not have sufficient capacity and expertise to manage the operational risks of the Project entirely on their own. As a result, the local industry normally retains only about 5% to 10% of the risk while 90 % to 95% is reinsured abroad. Considering that the reinsurance abroad forms a major part of the insurance cost, it is submitted that NEPRA approves the Project's Insurance Costs in United States Dollars, as has been the practice in NEPRA's determinations for thermal IPPs:

(b) Lenders financing the Project will require insurance of the Project's assets on a replacement cost basis, which will be inevitably in foreign currency. In view of the Project's EPC Cost being denominated in United States Dollars, it is expected that any replacement costs resulting from an insurable event will be incurred in United States Dollars.

The operational phase insurance costs forming the Insurance Costs have been calculated at 1% of the EPC Cost. In light of NEPRA's determinations for recent Wind IPPs and for thermal IPPs, it is submitted that NEPRA approves and allows the operational insurance costs up to 1.35% of the EPC Cost provided that such costs will be charged by the Project Company at actuals and will be recoverable as the Insurance Cost component.

The Project Company, in view of the practices set by other IPPs in Pakistan and in accordance with the requirements set out by the Lenders, proposes to procure the insurances that will meet the requirements of its various stakeholders (including the lenders and the power purchaser) during the operational phase of the Project and include (but not limited to):

(a) Property Damage Insurance;

(b) Comprehensive Machinery Insurance; and

(c) Business Interruption Insurance.

In addition to inclusion of the premiums payable under the above stated operational phase insurances, the Insurance Cost estimates also include the administrative surcharge, the Federal Insurance Fee and the Federal Excise Duty, in each case, relating to the operational phase insurances.

7. REFERENCE GENERATION TARIFF, DEBT SCHEDULE & TARIFF ANALYSIS

7.1 REFERENCE GENERATION TARIFF TABLE

The Reference Generation Tariff for the Project over the 20 year concession term is given below (unless specified otherwise all figures are in Rs. / kWh):

Years	Fixed O&M		Insurance	ROE	WHT on ROE	Debt (Local)		Debt (Foreign)		Total	
	Foreign	Local				Principal	Interest	Principal	Interest	Rs. / kWh	US Cents / kWh
1	0.6703	0.4458	0.6734	3.7027	0.3002	1.3924	5.0651	2.4214	1.6802	16.3515	18.6235
2	0.6562	0.4365	0.6593	3.6250	0.2939	1.5955	4.7264	2.5023	1.5132	16.0082	18.2326
3	1.5261	0.5189	0.6593	3.6250	0.2939	1.8676	4.4543	2.6413	1.3742	16.9605	19.3172
4	1.5261	0.5189	0.6593	3.6250	0.2939	2.1860	4.1359	2.7880	1.2275	16.9605	19.3172
5	1.5261	0.5189	0.6593	3.6250	0.2939	2.5588	3.7631	2.9429	1.0726	16.9605	19.3172
6	1.5261	0.5189	0.6593	3.6250	0.2939	2.9951	3.3268	3.1063	0.9091	16.9605	19.3172
7	1.5261	0.5189	0.6593	3.6250	0.2939	3.5058	2.8162	3.2789	0.7366	16.9605	19.3172
8	1.5261	0.5189	0.6593	3.6250	0.2939	4.1035	2.2184	3.4610	0.5544	16.9605	19.3172
9	1.5261	0.5189	0.6593	3.6250	0.2939	4.8032	1.5187	3.6533	0.3622	16.9605	19.3172
10	1.5261	0.5189	0.6593	3.6250	0.2939	5.6222	0.6997	3.8563	0.1592	16.9605	19.3172
11	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
12	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
13	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
14	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
15	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
16	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
17	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
18	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
19	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
20	1.7147	0.5300	0.6734	3.7027	0.3002	-	-	-	-	6.9210	7.8827
Levelize	1.4028	0.5062	0.6647	3.6549	0.2963	1.9590	2.6182	2.1227	0.7846	14.0095	15.9561

7.2 LOCAL DEBT PAYMENT SCHEDULE

The Local Debt Payment Schedule, based on the capital cost of the Project is as follows.

Repayment Period	Principal Repayment (PKR)	*Principal Tariff Component (Rs. /kWh)*	Interest on Outstanding Debt (PKR)	*Interest Tariff Component (Rs. /kWh)*	Total Installment (PKR)	*Debt Servicing Component of Tariff (Rs. / kWh)*
1	94,172,865	*0.6688*	360,467,717	*2.5599*	454,640,582	*3.229*
2	101,885,623	*0.7084*	352,754,960	*2.4526*	454,640,582	*3.161*
3	110,230,055	*0.7664*	344,410,527	*2.3946*	454,640,582	*3.161*
4	119,257,897	*0.8292*	335,382,685	*2.3318*	454,640,582	*3.161*
5	129,025,118	*0.8971*	325,615,464	*2.2639*	454,640,582	*3.161*
6	139,592,276	*0.9705*	315,048,307	*2.1904*	454,640,582	*3.161*
7	151,024,883	*1.0500*	303,615,699	*2.1109*	454,640,582	*3.161*
8	163,393,821	*1.1360*	291,246,761	*2.0249*	454,640,582	*3.161*
9	176,775,775	*1.2291*	277,864,807	*1.9319*	454,640,582	*3.161*
10	191,253,711	*1.3297*	263,386,871	*1.8312*	454,640,582	*3.161*
11	206,917,390	*1.4695*	247,723,192	*1.7593*	454,640,582	*3.229*
12	223,863,924	*1.5898*	230,776,658	*1.6389*	454,640,582	*3.229*
13	242,198,379	*1.7200*	212,442,203	*1.5087*	454,640,582	*3.229*
14	262,034,427	*1.8609*	192,606,156	*1.3678*	454,640,582	*3.229*
15	283,495,046	*2.0133*	171,145,536	*1.2154*	454,640,582	*3.229*
16	306,713,290	*2.1782*	147,927,292	*1.0505*	454,640,582	*3.229*
17	331,833,109	*2.3566*	122,807,473	*0.8721*	454,640,582	*3.229*
18	359,010,241	*2.5496*	95,630,342	*0.6791*	454,640,582	*3.229*
19	388,413,179	*2.7584*	66,227,403	*0.4703*	454,640,582	*3.229*
20	420,224,219	*2.9843*	34,416,364	*0.2444*	454,640,582	*3.229*

7.3 FOREIGN DEBT PAYMENT SCHEDULE

The Foreign Debt Payment Schedule, based on the capital cost of the Project is as follows.

Repayment Period	Principal Repayment (PKR)	*Principal Tariff Component (Rs. /kWh)*	Interest on Outstanding Debt (PKR)	*Interest Tariff Component (Rs. /kWh)*	Total Installment (PKR)	*Debt Servicing Component of Tariff (Rs. / kWh)*
1	168,175,898	*1.1943*	120,596,037	*0.8564*	288,771,935	*2.051*
2	172,783,918	*1.2013*	115,988,018	*0.8064*	288,771,935	*2.008*
3	177,518,197	*1.2342*	111,253,738	*0.7735*	288,771,935	*2.008*
4	182,382,196	*1.2680*	106,389,740	*0.7397*	288,771,935	*2.008*
5	187,379,468	*1.3028*	101,392,468	*0.7049*	288,771,935	*2.008*
6	192,513,665	*1.3385*	96,258,270	*0.6693*	288,771,935	*2.008*
7	197,788,540	*1.3752*	90,983,396	*0.6326*	288,771,935	*2.008*
8	203,207,946	*1.4128*	85,563,990	*0.5949*	288,771,935	*2.008*
9	208,775,844	*1.4515*	79,996,092	*0.5562*	288,771,935	*2.008*
10	214,496,302	*1.4913*	74,275,634	*0.5164*	288,771,935	*2.008*
11	220,373,500	*1.5650*	68,398,435	*0.4857*	288,771,935	*2.051*
12	226,411,734	*1.6079*	62,360,201	*0.4429*	288,771,935	*2.051*
13	232,615,416	*1.6520*	56,156,520	*0.3988*	288,771,935	*2.051*
14	238,989,078	*1.6972*	49,782,857	*0.3535*	288,771,935	*2.051*
15	245,537,379	*1.7437*	43,234,557	*0.3070*	288,771,935	*2.051*
16	252,265,103	*1.7915*	36,506,832	*0.2593*	288,771,935	*2.051*
17	259,177,167	*1.8406*	29,594,769	*0.2102*	288,771,935	*2.051*
18	266,278,621	*1.8910*	22,493,314	*0.1597*	288,771,935	*2.051*
19	273,574,655	*1.9429*	15,197,280	*0.1079*	288,771,935	*2.051*
20	281,070,601	*1.9961*	7,701,334	*0.0547*	288,771,935	*2.051*

7.4 TARIFF CONTROL PERIOD

As the Project is 75 % funded by Debt with the Debt tenure of 10 years for repayment, there will be higher Debt service cost requirements in the first 10 years of the Project. In the last 10 years of the Project, the tariff will be decreased due to no Debt service related costs.

The proposed Reference Generation Tariff is for the life of the Project i.e. term of the EPA signed with the Power Purchaser, which is 20 years from COD. The tariff is divided into three (03) bands i.e. year 1 – 2, year 3 – 10 and year 11 – 20 to cover the variations due to debt repayment period, warranty period O&M, and post-warranty period O&M.

7.5 BONUS ENERGY PAYMENTS

As per the RE Policy 2006, wind risk is guaranteed by the Government of Pakistan. Pursuant to the policy, the tariff for Wind IPPs is based on monthly energy table corresponding to the monthly benchmark wind speeds and bonus payments (the **Bonus Energy Payments**) are also applied on energy produced in excess of the benchmark energy.

NTDC, in its recent negotiations, has applied the bonus payments on an annual basis. NTDC justifies its stance by arguing that NEPRA's determinations are silent on this issue. NTDC's stance being contrary to the intent and essence of the RE

Policy 2006, it is submitted before NEPRA that it expressly details in its determination of the reference Generation Tariff for the Project Company that Bonus Energy Payments will be effected for each billing month on a monthly basis as per the RE Policy 2006.

7.6 CORRECTION FACTOR

The method for tariff calculation employed by NEPRA is based on the assumption that the energy produced on a monthly basis is the average of the annual energy production figure (i.e. annual energy production /12) and therefore, the Project Company is expected to receive harmonized cash flows throughout the year.

However, the energy produced by the Project for a given month is directly dependent on the wind speed for that month, which varies significantly from one month to the next and thus results in erratic Project cash flows.

The Total Project Cost is to be funded on a 75:25 Debt: Equity basis and variation in monthly wind speed will result in an un-even behavior of the cash flows – thus hampering the Debt servicing capability of the Project Company. Therefore, the Project Company requests NEPRA to allow a correction factor to be applied to the monthly energy production figure (to be used for calculation of the Monthly Energy Payment (as defined under the EPA)) (the **Correction Factor**) that is similar to the treatment provided in schedule 10 of the standard Power Purchase Agreements for thermal power producers.

The Correction Factor formula proposed to be applied for calculation of Monthly Energy (to be used for determining the Monthly Energy Payment) is set out below:

$$Correction\ Factor = \frac{\left(\frac{Sum\ of\ Monthly\ Benchmark\ Energy\ for\ a\ year}{12}\right)}{Monthly\ Benchmark\ Energy\ for\ the\ relevant\ month}$$

The Correction Factor being requested will not impact the total annual revenues of the Project Company and will only provide means of self-sustenance to the Project.

8. INDEXATIONS & ADJUSTMENTS

8.1 INDEXATIONS

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

8.1.1 Local Fixed O&M Cost Component

The Reference Local Fixed O&M Cost Component shall be quarterly indexed to the WPI of manufacturing in Pakistan, as notified by the Federal Bureau of Statistics based on the following formula:

$$LFO\&M_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * (WPI_{(Rev)} / WPI_{(Ref)})$$

Where:

$LFO\&M_{(LRev)}$ = the revised Local Fixed O&M Cost Component applicable for the relevant quarter

$WPI_{(Rev)}$ = the revised WPI of manufacturing in Pakistan for the month prior to the month in which indexation is applicable, as notified by the Federal Bureau of Statistics.

$WPI_{(Ref)}$ = the WPI of manufacturing in Pakistan for the month in which tariff is determined, as notified by the Federal Bureau of Statistics.

8.1.2 Foreign Fixed O&M Cost Component

The Reference Foreign Fixed O&M Cost Component shall be annually indexed to both:

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

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

The applicable formula shall be as follows:

$$FFO\&M_{(FRev)} = \text{Relevant Reference Generation Tariff Component} * (US\ CPI_{(Rev)} / US\ CPI_{(Ref)}) * (FX\ USD_{(Rev)}/87.80)$$

Where:

$FFO\&M_{(FRev)}$ = the revised Foreign Fixed O&M Cost Component, applicable for the relevant year

$US\ CPI_{(Rev)}$ = the revised US CPI (for all Urban-consumers) for the year prior to the year in which indexation is applicable, issued by US Bureau of Labor Statistics.

$US\ CPI_{(Ref)}$ = the US CPI (for all Urban-consumers) for the month of January, as issued by 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.

8.1.3 Insurance Cost

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

Furthermore, the Reference Insurance Cost Component has been calculated on the basis of insurance premium of US$ 1.080 million (1% of the EPC Price) per annum, which is subject to a maximum cap of 1.35% of the EPC Price per annum on the production of actual insurance premium. This adjustment of Insurance Cost Component of the Reference Generation Tariff for increased insurance premium shall only be applicable if the actual insurance premium for any year is more than US$ 1.080 million (1% of the EPC Price) and shall be applied for by the Project Company along with the quarterly indexations and shall be applicable for the next year.

(a) Indexation Formula

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

$$\text{Insurance}_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * \frac{(FX\ USD_{(Rev)})}{87.80}$$

Where:

$\text{Insurance}_{(Rev)}$ = the revised Insurance Cost 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.

(b) Adjustment Formula

The adjustment of the Insurance Cost Component for increase in insurance premium shall be based on the following formula:

$$\text{Insurance}_{(Adj)} = \text{Relevant Reference Generation Tariff Component} * \left(\frac{P_{(Act)}}{P_{(Ref)}}\right)$$

Where:

$\text{Insurance}_{(Adj)}$ = the revised Insurance Cost Component applicable for the relevant year

$P_{(Act)}$ = Actual Insurance Premium or 1.35% of the EPC Price whichever is lower

$P_{(Ref)}$ = Reference Insurance Premium of US$ 1.08 million (1% of the EPC Price)

8.1.4 Return On Equity

In line with NEPRA's previous determinations for thermal IPPs and the Wind IPPs, the ROE Component of 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:

$$\mathbf{ROE_{(Rev)} = Relevant\ Reference\ Generation\ Tariff\ Component^{*} (FX\ USD_{(Rev)}/87.80)}$$

Where:

$ROE_{(Rev)}$	=	the revised ROE 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.

8.1.5 Withholding Tax on Dividend

The Reference Withholding Tax Component shall be quarterly indexed to 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:

$$\mathbf{WHT_{(Rev)} = Relevant\ Reference\ Generation\ Tariff\ Component * (FX\ USD_{(Rev)} / 87.80)}$$

Where:

$WHT_{(Rev)}$ =	the revised Withholding Tax 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.

8.1.1 Principal Component (Foreign)

The Reference Principal Component (Foreign) shall be semi-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 applicable formula shall be as follows:

$$\mathbf{PRIN_{(FRev)} = Relevant\ Reference\ Generation\ Tariff\ Component * (FX\ USD_{(Rev)} / 87.80)}$$

Where:

$PRIN_{(FRev)}$ =	the revised Principal Component (Foreign) applicable for the relevant semi-annual period
$FX\ USD_{(Rev)}$=	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.

8.1.2 Interest Charges (Local)

The Interest Charges (Local) part of the Reference Debt Service Component shall be semi-annually adjusted for variations in interest rate as a result of variation in 6 months KIBOR. The rationale for such semi-annual indexation is submitted in Section 5.3.3 of the Tariff Petition.

The Interest Charges (Local) of the Debt Service Component shall be indexed based on the following formula:

$$\mathbf{I_{(Rev)} = Relevant\ Generation\ Tariff\ Component * (KIBOR_{(Rev)} + 3.00\%) / (KIBOR_{(Ref)} + 3.00\%)}$$

Where:

$I_{(Rev)}$ = the revised Interest Charge component applicable for the relevant semi-annual period

$Kibor_{(Rev)}$ = the revised 6 month KIBOR rate at the end of each 6 months period.

$Kibor_{(Ref)}$ = 6 month KIBOR rate prevailing on the date of tariff determination (13.38%)

8.1.3 Interest Charges (Foreign)

The Interest Charges (Foreign) part of the Reference Debt Service Component shall be semi-annually adjusted for variations in interest rate as a result of variation in 6 months LIBOR & foreign exchange fluctuations in the PKR / USD exchange rate. The rationale for such semi-annual indexation is submitted in Section 5.3.3 of the Tariff Petition.

The Interest Charges (Foreign) of the Debt Service Component shall be indexed based on the following formula:

$$\mathbf{I_{(Rev)} = Relevant\ Generation\ Tariff\ Component * (LIBOR_{(Rev)} + 5.48\%) / (LIBOR_{(Ref)} + 5.48\%) * (FX\ USD_{(Rev)} / 87.80)}$$

Where:

$I_{(Rev)}$ = the revised Interest Charge component applicable for the relevant semi-annual period

$Libor_{(Rev)}$ = the revised 6 month LIBOR rate at the end of each 6 months period.

$Libor_{(Ref)}$ = 6 month LIBOR rate prevailing on the date of tariff determination (0.48%)

$FX\ USD_{(Rev)}$ = 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.

8.2 ADJUSTMENTS AT COD

NEPRA is requested to allow the adjustments (as set out in this Section 8.2 (*Adjustments at COD*)) to the Reference Generation Tariff at the time of true up at COD.

8.2.1 Adjustments To Total Project Cost

It is submitted that the Total Project Cost be adjusted at COD for the following based on the assumptions detailed in Section 5 (*Total Project Cost and Investments*) and the adjustment to the Total Project Cost to be reflected in the relevant tariff components (Return on Equity and Debt servicing):

(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 Debt and prevailing KIBOR / LIBOR rates during the Project construction period;

(c) The specific items of Total Project Cost to be incurred in foreign currency (US$ or Euro) be adjusted at COD based on the PKR / US$ or PKR / Euro exchange rate prevailing on the date the transaction was carried out;

(d) Customs duty and other taxes be adjusted as per actual;

(e) Impact of Sindh Sales Tax on Services Act 2011, Sindh Infrastructure Development Surcharge, and Federal Excise Duty be allowed as a pass-through;

(f) Return on Equity be adjusted at COD in accordance with the RE Policy 2006 in order to ensure an IRR based return of 17% on equity (while treating the project as a Build-Own-Operate type project);

(g) A Working Capital facility of PKR 87.5 million has been estimated for the Project, which does not include the impact of PKR / USD, PKR / Euro and variations in KIBOR / LIBOR. The actual amount of working capital required by the Project can only be assessed once COD has been achieved. For this reason, it is submitted that NEPRA allow the Project Company to claim One-Time Adjustment to the extent of working capital required by the Project at the time of achievement of COD.

9. CONSIDERATIONS WITH RESPECT TO EPA

9.1 POWER PURCHASE 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. This has, however, been removed from the latest draft of the EPA.

NEPRA is therefore 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.

In case the Project is not allowed to claim compensation, there will be no motivation for the Project to supply energy into the grid – which could otherwise assist in reducing the power demand-supply gap in the country.

9.2 BENCHMARK ENERGY TABLE

The Benchmark Energy Table and Complex Power Curve are used by the Power Purchaser as a means of estimating the performance of the Project. These provide a benchmark for the energy to be produced by the Project at a given wind speed. The payments to the Project Company for the energy produced as well as the coverage provided to the Project against wind speed variability risk shall be based on these tables and the same shall be attached as schedule 1 annex 2 of the EPA. The said tables also form the basis of payment to the Project Company against Non-Project Missed Volume (*as defined under the EPA*). NEPRA is therefore requested to approve the Benchmark Energy Table and Complex Power Curve provided below in order for the same to be appended as schedule 1 annex 2 of the EPA.

BENCHMARK ENERGY PRODUCTION TABLE

Month	Average Wind (m/s)	Annual Average Air Density (kg/m3)	Monthly Average Air Density (kg/m3)	Density Adjusted Wind Speed (m/s)	Gross Energy, Year 1 (GWh)	Gross Energy, Years 2-10 (GWh)	Net Energy, Year 1 (GWh)	Net Energy, Years 2-10 (GWh)	Net Energy, Year 11-20 (GWh)
January	5.2	1.16	1.203	5.3	5.42	5.53	5.214195071	5.32240396	5.214195071
February	5.6	1.16	1.189	5.6	6.27	6.4	6.068586667	6.196674747	6.068586667
March	5.9	1.16	1.157	5.9	7.47	7.62	7.230815273	7.378372848	7.230815273
April	7.8	1.16	1.144	7.7	13.5	13.79	13.16271273	13.44814303	13.16271273
May	9.9	1.16	1.132	9.8	21.36	21.82	20.88423079	21.33674069	20.88423079
June	10.3	1.16	1.136	10.2	20.91	21.36	20.45666909	20.89957818	20.45666909
July	10.4	1.16	1.134	10.3	22.21	22.68	21.72039038	22.18273745	21.72039038
August	9.6	1.16	1.143	9.6	20.82	21.26	20.35302352	20.78585907	20.35302352
September	8	1.16	1.148	8	14.55	14.86	14.19760727	14.50272242	14.19760727
October	5.2	1.16	1.156	5.2	4.66	4.76	4.45913002	4.557501737	4.45913002
November	4.4	1.16	1.178	4.5	3.15	3.22	2.985163636	3.054060606	2.985163636
December	4.9	1.16	1.197	4.9	4.27	4.36	4.079200323	4.167734869	4.079200323
				Total:	**144.58**	**147.66**	**140.8117248**	**143.8325296**	**140.8117248**
							AEP in Kilowatt Hours		
							140,811,725	**143,832,530**	**140,811,725**

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MONTHLY COMPLEX POWER CURVES

Energy Table Year 1 in GWH

Average Wind Speed (m/s)	January	February	March	April	May	June	July	August	September	October	November	December
Density	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
3	0.364469	0.501682	0.423492	0.288822	0.068775	0.181275	0.186821	0.167147	0.201680	0.278332	0.455661	0.390261
3.1	0.472678	0.610064	0.521864	0.377404	0.137636	0.260015	0.265519	0.236007	0.280419	0.366867	0.563927	0.498470
3.2	0.580887	0.718446	0.639910	0.485670	0.226170	0.348596	0.354053	0.324542	0.369001	0.475075	0.672194	0.606679
3.3	0.698933	0.836681	0.757956	0.593937	0.314705	0.437178	0.462262	0.422914	0.467425	0.583284	0.790303	0.734562
3.4	0.826816	0.974622	0.885840	0.702204	0.413076	0.545445	0.570471	0.531123	0.575692	0.701330	0.918255	0.872282
3.5	0.974374	1.112563	1.033397	0.830155	0.521285	0.663554	0.688517	0.649169	0.693801	0.829214	1.065891	1.010003
3.6	1.121932	1.260357	1.180955	0.967949	0.649169	0.781663	0.816400	0.777052	0.821753	0.966934	1.213527	1.167397
3.7	1.279326	1.418004	1.338349	1.115585	0.777052	0.909615	0.954121	0.904935	0.949704	1.114492	1.371006	1.324792
3.8	1.456395	1.585504	1.505581	1.263222	0.914772	1.057251	1.091841	1.052493	1.097341	1.271886	1.538327	1.501861
3.9	1.633465	1.762857	1.692488	1.430543	1.062330	1.204887	1.249236	1.209887	1.244977	1.439118	1.715491	1.688768
4	1.820371	1.950062	1.879394	1.597864	1.219725	1.362366	1.416468	1.367282	1.412298	1.616187	1.902497	1.875674
4.1	2.017114	2.147121	2.076137	1.784870	1.386956	1.529687	1.593537	1.544351	1.579619	1.793256	2.099345	2.082254
4.2	2.233532	2.354032	2.282718	1.971876	1.564026	1.706851	1.770606	1.731257	1.756783	1.990000	2.306036	2.298672
4.3	2.449950	2.570797	2.508973	2.168725	1.750932	1.893857	1.967350	1.918164	1.943789	2.196581	2.522570	2.515090

4.4	2.676205	2.787561	2.735228	2.385258	1.937838	2.090705	2.164093	2.114907	2.140638	2.412998	2.748945	2.751182
4.5	2.922134	3.024032	2.971320	2.601792	2.144419	2.287554	2.370674	2.321488	2.347328	2.639253	2.985164	2.997111
4.6	3.168063	3.260502	3.217249	2.828167	2.350999	2.504087	2.596929	2.547743	2.563862	2.865508	3.231224	3.252878
4.7	3.423830	3.516678	3.473016	3.064385	2.577254	2.720621	2.823184	2.773998	2.790238	3.111437	3.487127	3.518482
4.8	3.699271	3.772854	3.738619	3.320288	2.803509	2.956839	3.059276	3.010090	3.026456	3.367204	3.752873	3.793922
4.9	3.984549	4.038883	4.014060	3.576192	3.039601	3.193057	3.315042	3.256019	3.272516	3.622970	4.028461	4.079200
5	4.269827	4.314765	4.299338	3.841937	3.295368	3.439118	3.570809	3.511786	3.518577	3.898411	4.313891	4.374315
5.1	4.574779	4.590647	4.594453	4.127367	3.551134	3.704863	3.836412	3.777389	3.784322	4.173852	4.609164	4.689105
5.2	4.889568	4.876382	4.899406	4.412798	3.816738	3.970608	4.121690	4.052830	4.059910	4.459130	4.904436	5.003894
5.3	5.214195	5.162117	5.214195	4.708070	4.092179	4.246196	4.406968	4.338108	4.345341	4.754245	5.209552	5.328521
5.4	5.538822	5.457705	5.528985	5.013185	4.377457	4.531627	4.711920	4.633223	4.630771	5.059197	5.524509	5.662985
5.5	5.883123	5.763146	5.853611	5.328143	4.682409	4.826899	5.016873	4.938175	4.935886	5.373987	5.839467	6.007286
5.6	6.237261	6.068587	6.188075	5.652943	4.987361	5.122172	5.341499	5.243128	5.241001	5.688776	6.154424	6.361424
5.7	6.591399	6.374027	6.532376	5.987585	5.302151	5.437130	5.666126	5.567754	5.565801	6.013403	6.479224	6.725400
5.8	6.955374	6.679468	6.876677	6.322228	5.636615	5.752087	6.010427	5.902218	5.890601	6.338030	6.813867	7.089375
5.9	7.329187	6.994762	7.230815	6.666713	5.971078	6.076887	6.354728	6.246519	6.235086	6.672494	7.138667	7.463187
6	7.703000	7.310056	7.584953	7.021040	6.325217	6.411530	6.708866	6.600657	6.579571	7.016795	7.473309	7.837000
6.1	8.086649	7.625349	7.939092	7.375367	6.679355	6.756015	7.082679	6.954796	6.933898	7.361096	7.807952	8.220650
6.2	8.470299	7.940643	8.303067	7.739537	7.043330	7.110342	7.456491	7.328608	7.288225	7.705397	8.142594	8.604299
6.3	8.853949	8.255937	8.667042	8.103707	7.426980	7.464669	7.830304	7.702421	7.662238	8.049698	8.477236	8.997786
6.4	9.247435	8.561378	9.031018	8.467876	7.810630	7.818996	8.223791	8.086070	8.026407	8.403836	8.811879	9.381436
6.5	9.640922	8.876672	9.394993	8.832046	8.204116	8.183166	8.617278	8.479557	8.410262	8.757974	9.146521	9.774923
6.6	10.034409	9.191965	9.758968	9.206058	8.607440	8.557178	9.010765	8.873044	8.784274	9.121949	9.481164	10.158572
6.7	10.418059	9.497406	10.122944	9.580070	9.010765	8.931190	9.414089	9.276368	9.177971	9.476088	9.805964	10.552059
6.8	10.811546	9.802847	10.486919	9.944240	9.423926	9.315045	9.827250	9.689529	9.561825	9.830226	10.140606	10.935709
6.9	11.195195	10.108288	10.841057	10.318252	9.837087	9.689057	10.230574	10.102691	9.955522	10.184364	10.465406	11.319359
7	11.588682	10.403876	11.205033	10.682422	10.260085	10.072912	10.643735	10.515852	10.349219	10.538502	10.790206	11.693171

7.1	11.972332	10.699463	11.559171	11.046592	10.692921	10.456766	11.056896	10.938850	10.742916	10.892640	11.115006	12.076821
7.2	12.346145	10.995051	11.913309	11.410761	11.115919	10.840621	11.470057	11.352011	11.136613	11.246779	11.429964	12.450633
7.3	12.719957	11.290639	12.267447	11.765088	11.548755	11.224475	11.873381	11.775010	11.520468	11.600917	11.744921	12.814609
7.4	13.093770	11.576374	12.611748	12.129258	11.981590	11.608330	12.286543	12.198008	11.914165	11.945218	12.059879	13.178584
7.5	13.457745	11.852256	12.956049	12.473743	12.414426	11.992184	12.689867	12.621007	12.307862	12.289519	12.364994	13.532722
7.6	13.821720	12.128138	13.290513	12.818228	12.837424	12.376039	13.103028	13.044005	12.691716	12.633820	12.670109	13.886861
7.7	14.175859	12.404020	13.624977	13.162713	13.270260	12.750051	13.496515	13.467003	13.075571	12.968284	12.975224	14.231162
7.8	14.520160	12.679902	13.949604	13.497355	13.693258	13.124063	13.899839	13.880165	13.449583	13.302747	13.270497	14.575463
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8	15.198924	13.202107	14.589020	14.156798	14.539255	13.862245	14.676975	14.706487	14.197607	13.952001	13.861042	15.234553
8.1	15.533388	13.458284	14.893972	14.481598	14.952416	14.226415	15.060625	15.109811	14.561777	14.276627	14.146473	15.559180
8.2	15.858015	13.704607	15.198924	14.786713	15.355740	14.580742	15.434438	15.503298	14.925947	14.591417	14.431903	15.873969
8.3	16.172804	13.950930	15.503877	15.101670	15.759064	14.935069	15.798413	15.896785	15.280274	14.906206	14.707491	16.188759
8.4	16.477757	14.197253	15.798992	15.396943	16.152551	15.289396	16.162388	16.290272	15.624759	15.211159	14.983079	16.493711
8.5	16.782709	14.433724	16.084270	15.692216	16.546038	15.624039	16.526364	16.664084	15.969244	15.506274	15.248824	16.788826
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8.7	17.372939	14.896811	16.635151	16.272919	17.303500	16.293324	17.214966	17.411709	16.638528	16.096504	15.780315	17.359382
8.8	17.658217	15.123429	16.910592	16.548507	17.667476	16.618124	17.549430	17.765847	16.953486	16.381782	16.036218	17.634823
8.9	17.933658	15.340193	17.176196	16.814252	18.031451	16.933081	17.874056	18.119986	17.268444	16.657223	16.282279	17.910264
9	18.209099	15.556958	17.431962	17.079998	18.375752	17.248039	18.198683	18.464287	17.583401	16.932664	16.538182	18.175867
9.1	18.474703	15.763869	17.687729	17.345743	18.720053	17.543312	18.513472	18.798750	17.888516	17.208105	16.774400	18.431634
9.2	18.730469	15.970781	17.933658	17.591804	19.054517	17.848427	18.818425	19.123377	18.183789	17.463871	17.020461	18.687400
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9.4	19.232165	16.374751	18.415680	18.083925	19.703770	18.419287	19.408655	19.752956	18.754650	17.975404	17.483055	19.179259
9.5	19.468257	16.571809	18.641934	18.320143	20.008723	18.694875	19.693933	20.057908	19.030238	18.231170	17.709430	19.415351
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10	20.589694	17.478279	19.714186	19.422495	21.435112	19.984233	21.002277	21.444950	20.309753	19.382120	18.792097	20.517114
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10.5	21.573412	18.276366	20.658555	20.396895	22.654922	21.116112	22.153226	22.645085	21.431789	20.415023	19.756655	21.490994
10.6	21.760318	18.424160	20.835624	20.583901	22.881177	21.332645	22.369644	22.861502	21.638480	20.611766	19.943661	21.668063
10.7	21.937387	18.571954	21.002856	20.761064	23.097594	21.529493	22.576224	23.077920	21.835328	20.798672	20.120824	21.845132
10.8	22.114456	18.709895	21.170088	20.928385	23.304175	21.726342	22.772968	23.274664	22.032177	20.975741	20.288145	22.022202
10.9	22.281688	18.847836	21.337320	21.095707	23.510756	21.923190	22.969711	23.481244	22.229025	21.152810	20.455467	22.189433
11	22.448920	18.975924	21.484877	21.263028	23.707499	22.110196	23.166455	23.668150	22.406189	21.320042	20.622788	22.346828
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12.4	24.327820	20.365187	23.226056	23.152773	25.891351	24.226318	25.330632	25.792979	24.522310	23.238291	22.414109	24.196216

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13	24.888539	20.690334	23.698241	23.723634	26.560279	24.875918	26.019234	26.442233	25.171910	23.779335	22.876703	24.727424
13.1	24.967236	20.729745	23.767101	23.802373	26.658651	24.964499	26.127443	26.530767	25.270335	23.858033	22.935758	24.796284
13.2	25.036096	20.769157	23.826124	23.871270	26.757022	25.062924	26.225815	26.629139	25.368759	23.926893	22.984970	24.855307
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13.4	25.173816	20.818422	23.924496	24.009064	26.943929	25.230245	26.402884	26.796371	25.536080	24.044939	23.073552	24.973353
13.5	25.223002	20.847981	23.963844	24.068119	27.022626	25.308984	26.491419	26.875068	25.614819	24.103962	23.112921	25.022539
13.6	25.282025	20.857834	24.003193	24.127173	27.111160	25.377881	26.579953	26.953766	25.693559	24.153148	23.142448	25.071725
13.7	25.321374	20.877539	24.042542	24.176385	27.189858	25.456621	26.658651	27.022626	25.762456	24.202334	23.171976	25.111073
13.8	25.370560	20.887392	24.072053	24.215755	27.268555	25.515675	26.727511	27.091486	25.831353	24.241682	23.191661	25.140585
13.9	25.400071	20.887392	24.091728	24.255125	27.337415	25.584572	26.796371	27.150509	25.890407	24.281031	23.211345	25.170096
14	25.429583	20.897245	24.111402	24.294495	27.406276	25.643627	26.865231	27.219369	25.949462	24.310543	23.231030	25.189771
14.1	25.459094	20.887392	24.121239	24.324022	27.475136	25.692839	26.924254	27.268555	26.008516	24.340054	23.240873	25.199608
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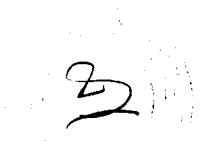
14.3	25.488606	20.877539	24.140913	24.363392	27.603019	25.791263	27.032463	27.376764	26.097098	24.379403	23.250715	25.219282
14.4	25.488606	20.867686	24.140913	24.373234	27.652205	25.840475	27.081649	27.425950	26.136468	24.389240	23.240873	25.219282
14.5	25.498443	20.847981	24.131076	24.383076	27.711228	25.879845	27.120998	27.465299	26.175838	24.399077	23.240873	25.209445
14.6	25.488606	20.828275	24.121239	24.383076	27.760414	25.909372	27.160346	27.504647	26.205365	24.408914	23.231030	25.189771
14.7	25.478769	20.808569	24.111402	24.383076	27.799763	25.938899	27.189858	27.534159	26.234892	24.408914	23.211345	25.179934
14.8	25.459094	20.779010	24.091728	24.373234	27.839111	25.968427	27.219369	27.563670	26.254577	24.399077	23.201503	25.150422
14.9	25.439420	20.749451	24.072053	24.363392	27.878460	25.988112	27.239044	27.593182	26.264419	24.389240	23.181818	25.120911
15	25.419746	20.719893	24.042542	24.343707	27.907971	26.007796	27.258718	27.612856	26.284104	24.379403	23.152291	25.081562

For average monthly wind speed values less than 3m/s or greater than cut off wind speed, the energy production values shall be nil/zero;

For average monthly wind speed values above 15m/s up to the cut off speed, the energy production values shall be the same as that for 15m/s;



10. GENERAL ASSUMPTIONS

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

10.1 Debt : Equity ratio is assumed to be 75:25.

10.2 Foreign Lenders shall contribute towards funding 50% of the Debt (LIBOR based Foreign Financing) while the remaining 50% will be funded through Local Lenders (KIBOR based Local Financing). The Debt mix assumed for the Project will be firmed up and submitted to NEPRA prior to achievement of financial close

10.3 Interest rate for LIBOR based debt (i.e. Foreign Financing) has been determined based on 6 Month LIBOR (0.48%) plus 5.00% spread (inclusive of ADB REDSIP Facility Fee) and semi-annual indexation on the same will be allowed by NEPRA.

10.4 Indexation against PKR / USD variations will be permitted for Debt servicing payments to be made for settlement of foreign source debt (i.e. Foreign Financing).

10.5 Interest rate for KIBOR based debt (i.e. Local Financing) has been determined based on 6 Month KIBOR (13.38%) plus 3.00% spread and semi-annual indexation on the same will be allowed by NEPRA.

10.6 A constant ROE of 17% (IRR based) is assumed (net of 7.5% withholding tax on dividends) over 20 years. The ROE DC shall be accrued at the time of COD according to the actual schedule of Equity disbursement.

10.7 Exchange rate has been assumed to be: PKR 87.80 /USD.

10.8 Any taxes federal, provincial, local or district, stamp duties and levies etc which are not factored in the Reference Generation Tariff calculation shall be treated as "*pass-through*" items, in term of EPA.

10.9 No customs duties and income tax have been considered for imports. Any changes in the customs duties or any other duty or tax on import of equipment and material will be treated as "*pass through*" to the Power Purchaser. Similarly, customs duties on spare parts after COD will be "*passed through*" to the Power Purchaser.

10.10 The Project Company does not come under the ambit of Sindh Sales Tax on Services Act, 2011. In case it is deemed that the Project Company is subject to payment of any taxes under the said act, the same are to be treated as a "*pass-through*" to the Power Purchaser.

10.11 Deduction of withholding tax at the rate of 6% is assumed only in the On-Shore Agreement of the EPC Terms & Arrangements. No withholding tax has been considered in the Offshore Agreement of the EPC Terms & Arrangements. Any additional tax, if levied, or an increase in the withholding tax, in each case, will be "*pass through*" to the Power Purchaser

10.12 7.5% withholding tax on dividend is assumed. Any changes in the aforesaid withholding tax regime will be "*pass through*" to the Power Purchaser. General Sales Tax and all other taxes will also be treated as a "*pass through*"

10.13 The Zakat deduction on dividends (currently @ 2.5%), as required to be deducted under Zakat Ordinance, is to be considered as "*pass through*".

10.14 Sindh Infrastructure Development Surcharge @ 0.850% of the imports for the Project has been assumed.

10.15 Federal Excise Duty has not been assumed as part of the Total Project Cost. In case the same is required to be paid by the Project Company, the same should be treated as "*pass-through*" under the tariff.

10.16 The Return on Equity for the construction and commissioning period shall be adjusted on IRR basis at the time of COD according to the actual Equity disbursement during such period.

10.17 The Power Purchaser / NTDC shall be exclusively responsible for the financing of construction, operation and maintenance of the interconnection and transmission lines as per the prevailing policy at the time of tariff determination.

10.18 Main energy meter and electronic recorder for continuous recording of readings will be provided by NTDC at its own cost.

10.19 Debt financing terms are as yet based on the initial discussion with the potential Lenders and hence are subject to final negotiations once tariff has been determined by NEPRA and the EPA / IA are signed. This will include mainly the debt-equity ratio, Grace Period and loan repayment term, benchmark index (LIBOR/KIBOR) and the spread margin of the Lenders.

10.20 Pre-COD insurance costs are considered based on the proposal received from top local insurance company. Premium rate for the insurance arrangements will be finalized at the time of financial close.

10.21 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 included in the Total Project Cost.

10.22 Project contingency and maintenance reserves are not included in Reference Generation Tariff calculations. If required by Lenders, these will be adjusted accordingly in the Reference Generation Tariff.

10.23 Any other assumptions that are not expressly stated herein but are based on the EPA draft to be negotiated by the Project Company with the Power Purchaser. Consequently any change in any such assumptions may lead to change in the Reference Generation Tariff.

10.24 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 at actual by the Power Purchaser.

10.25 Any incentives given to any other Wind IPP shall also be given to the Project Company.

11. TARIFF SUMMARY

In summation, the Project Company herewith most respectfully submits before NEPRA for its approval the matters set out in this Tariff Petition and further submits before NEPRA to kindly approve the following:

(I) Energy production estimate of:

(a) 140.811 GWh per annum for calculation of the tariff and energy payments for the first year after COD;

(b) 143.830 GWh per annum for calculation of the tariff and energy payments for the years 2-10 after COD; and

(c) 140.811 GWh per annum for calculation of the tariff and energy payments for the years 11-20 after COD.

(II) Funding of the Project on 75:25 – Debt: Equity basis.

(III) The Power Purchaser be directed to make payment against Bonus Energy (energy above the Monthly Benchmark Energy) on monthly basis.

(IV) The Project Company be allowed to claim compensation for energy supplied prior to COD at the rate of tariff allowed by NEPRA for the first year minus the debt servicing components.

(V) Funding of the Project on a 75:25 – Debt: Equity basis.

(VI) Debt to be split on 50%: 50% Foreign Financing (LIBOR): Local Financing (KIBOR) basis. The Debt mix assumed for the Project will be firmed up and submitted to NEPRA prior to achievement of financial close.

(VII) LIBOR based Debt financing (50%) (i.e. Foreign Financing) with a base rate equal to 6-Month LIBOR plus a spread of 5.00% (inclusive of inclusive of ADB REDSIP Facility Fee), reasons for which have been explained under Section 5.3.3 above.

(VIII) KIBOR based debt financing (50%) with a base rate equal to 6-Month KIBOR plus a spread of 3.00%, reasons for which have been explained under Section 5.3.3 above.

(IX) Utilization of CER related revenues as set out in Section 4.12.

(X) A Return on Equity of 17% (net of 7.5% withholding tax) on IRR basis along with Return on Equity during Construction Period, reasons for which have been provided in detail in Section 5.3.2 (*Equity*) above.

(XI) Working Capital facility of PKR 87.5 million, to be adjusted at COD.

(XII) Indexations and adjustments for the individual tariff components, as detailed in Section 8.1 (*Indexations, Adjustments and Cost Escalations*) above.

(XIII) Insertion of Benchmark Energy Table and Monthly Complex Power Curve as Schedule 1 Annex 2 of the EPA, the same are provided under Section 9 (*Benchmark Energy & Complex Monthly Power Curve Tables*) above.

(XIV) The Reference Generation Tariff provided under Section 7 (*Reference Generation Tariff Table*) above along with individual tariff components and debt schedule provided under Section 7 above.

(XV) Adjustments at COD, as provided under Section 8.2 (*Adjustments at COD*) above.

(XVI) The Correction Factor, as explained under Section 7.6 (*Correction Factor*) above.

(XVII) The General Assumptions, as provided in Section 10 (*General Assumptions*).

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

In light of the submissions, the financial analysis and information contained in this Tariff Petition, along with the Annexures attached hereto, and in the national interest of expediting Project Company's wind power generation Facility's establishment process under the auspices of Government of Pakistan and its commitment to developing a renewable energy based generation capacity in Pakistan, this Tariff Petition is submitted for NEPRA's approval of the Reference Generation Tariff.

Respectfully submitted for and on behalf of:
MASTER WIND ENERGY LIMITED

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MR. NAUMAN MIRZA
Chief Financial Officer & Authorized Representative of Master Wind Energy Limited

ANNEXURE A – COPY OF FEASIBILITY STUDY APPROVAL LETTER

Government of Pakistan
Alternative Energy Development Board (AEDB)
3, Street No. 6, F-8/3, Islamabad.
Tel: 92 51 9262947-50, Fax: 92 51 9262977

AEDB

B.3/MWEL/07 August 2011

Mr. Naveed Malik
Chairman
Master Wind Energy Ltd.
32-C II, Gulberg-II
Lahore

Subject: **FEASIBILITY STUDY OF MASTER WIND ENERGY LIMITED FOR WIND FARM POWER PROJECT, JHIMPIR, SINDH**

This refers to your letter No. Nil dated August 25, 2011 on the subject cited above.

2. Alternative Energy Development Board (AEDB) has received the Feasibility Study of the 49.5 MW wind power project of M/s MWEL which is currently under review. The approval of Feasibility study is linked with the following milestones:

- Verification of Power Production Estimates from Risoe.
- Approval of Grid Interconnection studies from NTDC
- Approval of EIA/IEE Study from EPA, Sindh.

3. The IPP has already acquired the necessary approvals of the Grid Interconnection study and IEE study from the relevant agencies. AEDB has initated the process of verification of production estimates through RISOe. AEDB hereby provisionally accepts the feasibility study of the 49.5 MW wind power project of M/s MWEL. The final approval of the feasibility study shall be accorded based on the verification of power production estimates by RISOe. M/s MWEL may however proceed ahead with the application of tariff to NEPRA.

(Syed Aqeel Hussain Jafri)
Deputy Director (Policy)

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ANNEXURE B – COPY OF IEE APPROVAL DECISION

Reference No: EPA/2010/11/02/IEE/103/1161

ENVIRONMENTAL PROTECTION AGENCY

GOVERNMENT OF SINDH

Plot # ST-2/1, Sector 23, KIA, Karachi-74900
Ph: 5065950, 5065598, 5065637
5065532, 5065946, 5065621
epasindh@cyber.net.pk
Facsimile: 5065940

27-11-2010

Subject: DECISION ON INITIAL ENVIRONMENTAL EXAMINATION (IEE)

1.	Name & Address of Proponent:	Master Wind Energy (Pvt) ltd, 54, Darul- Aman Cooperative Society, Karachi.
2.	Description of Project:	50 MW wind power project
3.	Location of Project:	Jhampir, Sindh.
4.	Date of Filing of IEE:	26-10-2010

5. After careful review of the Initial Environmental Examination (IEE) report, the Environmental Protection Agency (EPA), Government of Sindh, has decided to accord its approval subject to the following conditions.

a) During the project execution safe distances of the under mentioned environmental sensitive will be:

- 500m from communities, industrial and main transport network
- 300m from community water well
- 100m from archeological/cultural site/ monument

b) Distance will be measured from the tip blade of turbines or /and transmission power lines associated.

c) Project activity will not be carried within buffer zone of any projected area designated under Sindh Wildlife Protection Act.

d) Effect on wildlife will be monitored during the migratory session of birds and reports of findings will be submitted to EPA, Sindh.

e) Campsite will be located at least one kilometer away from any settlement to avoid disturbance to the local people.

f) No industrial or residential activity will be permitted on the land allocated for wind energy projects.

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g) The project will be restored to its original nature to the possible extent. For the purpose; documentation (photographs) will be kept in record.

h) The project shall be constructed in the prescribed time strictly as per schedule, which shall be submitted to this office at the start of construction activity.

i) Employment will be provided to local people and assured for all unskilled jobs. Skilled jobs will be given to the locals after providing them proper field training, where a minimum training will be required.

j) Benefits to locals offered under Corporate Social Responsibility (CSR) Policy, community development schemes will be decided in consultation with local communities and may be facilitated by involving district/local government office.

k) The proponent shall ensure facilitation to the EPA Officers / officials for the regular inspection to verify the compliance of the PEP Act,1997 rules and regulations framed there under and the conditions contained in this approval.

l) Compensation will be provided to the inhabitants in case of loss of agriculture land, crop property ,etc, in accordance with the rates ,that are agreed upon all conflicting issues regarding compensation etc, should be settled in advance prior to the start of activity.

m) The industrial safety rules will be practiced during construction of the project like proper handling of electrical devices, tools, equipment, construction materials and use of safety gear to prevent accidents to personnel.

6. This approval shall be treated as null and void if the conditions, mentioned in above Para # 5, and are not complied with.

7. The proponent shall be liable for compliance of section 13, 14, 17 and 18 of EIA/IEE Regulation, 2000, which direct for condition for approval, conformation of compliance, entry, inspection and monitoring.

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8. This approval is accorded only for the project activity described in the IEE report. Proponent should submit separate IEE for any enhanced change in the project.

9. This approval does not absolve the proponent of the duty to obtain any other approval or consent that may be required under any law in force.

10. Implementation report of all conditions laid down in the approval of IEE shall be submitted on monthly basis .no violation of any regulations, rules, instructions and provision of PEEP, Act 1997 shall be made. In case of such violations of the rules/law, the approval shall stand cancelled without any further notice.

(NAEEM A MUGHAL)
DIRECTOR GENERAL

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ANNEXURE C – COPY OF GRID INTERCONNECTION APPROVAL LETTER

NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

Phone: 042-99202545
Fax No: 042-99202604

Office of the
General Manager Planning (Power)
5th Floor, PIA Building, Egerton Road, Lahore.

No. GMPP/CEMP/TRP-380/Common/1597-98 25 MAY 2011

Chief Operating Officer (CPPA)
WAPDA House, Lahore.

Atten: Chief Engineer (CPPA)

Sub: Vetting of Final Draft Reports of Electrical Grid Interconnection Study for Wind Power Projects (WPPs)

Ref: CPPA Letter Nos.
i) COO/CPPA/CE/MT-III/SEDPL/5953-58 dated 05-10-2010.
ii) COO/CPPA/CE/MT-III/TGL/7650-54 dated 03-11-2010.
iii) COO/CPPA/CE/MT-III/MWEPL/573-77 dated 24-01-2011

Various discussions were held in our office with the representative of M/s PPI in the light of our observations on the study results and assumptions. Consequently, after incorporating the comments of Planning Power, the final reports of electrical grid interconnection studies of the following WPPs have been vetted;

i) M/s Master WPP, Jhimpir
ii) M/s Sachal WPP, Jhimpir
iii) M/s Tenaga WPP, Gharo

Since actual sites of the proposed 220/132 kV grid station(s), at Gharo and Jhimpir are not yet finalized, the interconnection schemes are vetted assuming that final sites of the said grid station(s) will remain the same as proposed in the respective reports.

Further, the Consultant M/s PPI may be advised to provide the vetted copies of the relevant parts to all the concerned formations for their reference and record, please.

Nisar Ahmad Bazmi
Chief Engineer Master Planning

Copy to:

- General Manager (Services Division) NTDC
- *Master file.*

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FOR WIND ENERGY LTD.

M/F

ANNEXURE D – COPY OF OFFER TO SELL POWER

MASTER
Wind Energy (Private) Limited
Head Office: 82-C/I, Gulberg-III,
Lahore – Pakistan
Tel: (0092-42-35752620-22)
UAN: 111-666-555
Fax: (0092-42-35750895 & 35751905)

Ref: MWEPL/NTDC/025/2011

Dated: August 03, 2011

MR. KHADIM HUSSAIN BALOCH,
Chief Engineer
National Transmission And Despatch Company Limited,
WAPDA House,
Shahrah-e- Quaid-e- Azam,
Lahore,

Subject **OFFER TO SELL POWER BY MASTER WIND ENERGY (PVT.) LTD. TO NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED FROM ITS 50 MW WIND POWER GENERATION FACILITY TO BE LOCATED AT JHAMPIR, DISTRICT THATTA, SINDH, PAKISTAN.**

Dear Sir,

We, Master Wind Energy (Pvt.) Ltd. (**MWEPL**), refer you to the energy purchase agreement (the **Energy Purchase Agreement**) – to be executed between MWEPL and National Transmission And Despatch Company Limited ((through its Central Power Purchasing Agency) on behalf of ex-WAPDA Distribution Companies)) (the **Power Purchaser**) – relating to the 50 MW wind power generation facility to be located at Jhampir, District Thatta, Sindh, Pakistan (the **Project**).

It is humbly highlighted that pursuant to the section 8.2.1 of the Policy for Development of Renewable Energy for Power Generation 2006 (the **RE Policy 2006**), it is mandatory for the power distribution utilities to buy all electricity offered to them by renewable energy projects that are established in accordance with the provisions given in section 8.2.2 of the RE Policy 2006. Further since the Project is in accordance with section 8.2.2 of the RE Policy, section 8.2.1 will be applicable to it.

In view of the foregoing, MWEPL hereby offers for sale to the Power Purchaser the power to be generated through its Project pursuant to the terms of the Energy Purchase Agreement (the **Offer For Sale of Power**).

We hope that MWEPL's Offer For Sale of Power to the Power Purchaser will enable the Power Purchaser to meet its regulatory requirements relating to the purchase of power from the Project and look forward to expeditious conclusion of such process. We thank you for your continuing support to the development of wind power sector in Pakistan and to our Project.

Sincerely,
For and on behalf of
MASTER WIND ENERGY (PVT.) LTD.

NAVEED MALIK
CHAIRMEN

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MASTER WIND ENERGY LTD.