National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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Registrar

No. NEPRA/TRF-196/MWEL-2011/5789-5791
June 29, 2012

Subject: **Determination of National Electric Power Regulatory Authority in the matter of Tariff Petition filed by Master Wind Energy Ltd. (Case No. NEPRA/TRF-196/MWEL-2011)** Intimation of Determination of Tariff pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997)

Dear Sir,

Please find enclosed herewith the subject Determination of the Authority along with Annexure-I & II and Note of Mr. Shaukat Ali Kundi, Member NEPRA (35 pages) in Case No. NEPRA/TRF-196/MWEL-2011.

2. The Determination is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997) and Rule 16(11) of the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998.

3. Please note that only Order of the Authority at para 16 of the Determination relating to the reference tariff, adjustments, indexation and terms and conditions etc along with Annexure-I, II & III needs to be notified in the official Gazette.

Enclosure: As above

(Syed Safeer Hussain)

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Secretary
Ministry of Water & Power
'A' Block, Pak Secretariat
Islamabad

CC:
1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.

Determination of National Electric Power Regulatory Authority in the matter of tariff petition filed by Master Wind Energy Limited (Case No. NEPRA/TRF-196/MWEL-2011)

1. Master Wind Energy Limited (hereinafter referred to as the "petitioner") filed a tariff petition (hereinafter referred to as the "petition") under rule 3 of the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998 (hereinafter referred to as the "Tariff Rules") for determination of generation tariff in respect of its 49.50 MW wind power project envisaged to be set up at Jhampir, District Thatta in the Province of Sindh.

2. In accordance with sub-rule 3 of rule 4 of the tariff rules, the petition was admitted for hearing by the National Electric Power Regulatory Authority (hereinafter referred to as "the Authority") on November 17, 2011. Consequent to the admission, notice of admission/public hearing was published in the national newspapers on December 10, 2011 inviting thereby all the stakeholders, interested/affected persons or parties to participate in the tariff setting process through filing of comments / intervention requests. Subsequently, on request of the petitioner, the earlier scheduled public hearing had to be postponed. Notice of rescheduled public hearing was published in the national newspapers on February 03, 2012. Further, in accordance with sub-rule 5 of rule 4 of the tariff rules, the Authority also gave directions for service of notices to the respondents and other parties which in the opinion of the Authority were likely to be affected or interested or may be of assistance to the Authority in arriving at a just and informed determination, for filing comments, replies or communications in opposition or in support of the petition. In response to the notices of admission/public hearing, no intervention request was filed. However, comments were received from the stakeholders regarding net annual benchmark energy generation, debt terms, size of the selected wind turbines, efficiency of selected wind turbines in the high ambient temperatures, course of action undertaken to arrive at the EPC cost, various components of the project cost and some other matters. These comments have been considered by the Authority and where appropriate have been discussed in relevant parts of this determination. Public hearing in this regard was held on February 23, 2012 at Islamabad, which was attended by the petitioner, representatives of the proposed power purchaser,

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Alternative Energy Development Board (hereinafter referred to as "AEDB") and various other stakeholders.

3. Summary of the key information provided by the petitioner is as follows:

Type of the project	:	Wind power project
Project location	:	Jhampir, District Thatta, Sindh, Pakistan
Installed capacity	:	49.50 MW
Land area	:	1,408 acres
Concession period	:	20 years from commercial operations date
Proposed power purchaser	:	National Transmission And Despatch Company Limited (through Central Power Purchasing Agency)
EPC contractors	:	China Machinery Engineering Corporation and China East Resource Import and Export Corporation
Turbine specifications:		
Manufacturer	:	General Electric
Model	:	1.5 XLE
Number of turbines	:	33
Hub height	:	80 meters
Turbine capacity	:	1.50 MW each
Estimated net annual benchmark energy	:	Year 1 and Years 11- 20 - 140.811 GWh. Years 2 to 10 - 143.830 GWh.
Annual net plant capacity factor – average	:	32.79%
Financing structure	:	Debt 75% - Equity 25%
Debt composition	:	50% foreign and 50% local
Interest rate	:	<u>For foreign debts</u> Six months LIBOR + 5% spread (inclusive of cost of Asian Development Bank Renewable Energy Development Sector Investment Program Guarantee Facility) <u>For local debts</u> Six months KIBOR + 3%

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<table>
<tr><td>Debt repayment period</td><td>:</td><td>Upto 12 years including up to 24 months grace period</td></tr>
<tr><td>Debt repayment basis</td><td>:</td><td>Biannual</td></tr>
<tr><td>Return on equity</td><td>:</td><td>17%</td></tr>
<tr><td>Project cost</td><td></td><td>US $ in millions</td></tr>
<tr><td>EPC price</td><td>:</td><td>108.000</td></tr>
<tr><td>Letter of credit confirmation Charges</td><td>:</td><td>1.328</td></tr>
<tr><td>Non-EPC costs</td><td>:</td><td>1.712</td></tr>
<tr><td>Project development costs</td><td>:</td><td>3.700</td></tr>
<tr><td>Land costs</td><td>:</td><td>0.088</td></tr>
<tr><td>Taxes and customs duty</td><td>:</td><td>0.780</td></tr>
<tr><td>Pre-COD insurance</td><td>:</td><td>1.476</td></tr>
<tr><td>Financial charges</td><td>:</td><td>3.523</td></tr>
<tr><td>ECA/Sinosure fees</td><td>:</td><td>4.421</td></tr>
<tr><td>Working capital</td><td>:</td><td>0.997</td></tr>
<tr><td>Interest during construction</td><td>:</td><td>7.652</td></tr>
<tr><td>Total project cost</td><td>:</td><td>133.677</td></tr>
<tr><td>Project operations cost per annum</td><td>:</td><td>(US $ in millions)
<table>
<tr><td></td><td>Years 1 – 2</td><td>Years 03 – 10</td><td>Year 11 – 20</td></tr>
<tr><td>O&M costs</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 costs</td><td>2.870</td><td>4.430</td><td>4.680</td></tr>
</table></td></tr>
<tr><td>20 years levelized tariff</td><td>:</td><td>Rs. 14.0095/kWh. (US cents 15.9561/kWh)</td></tr>
<tr><td>Exchange rate</td><td>:</td><td>1 US $ = PKR 87.80</td></tr>
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4. **Issues**

4.1 Based on submissions of the petitioner, comments offered by the stakeholders as well as proceedings of the case, following main issues were framed for discussion and consideration of the Authority:

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- Whether due to submission of incomplete information regarding financing structure, to decide the petition on the basis of available record or to dismiss it?
- Whether net annual benchmark energy generation as claimed by the petitioner is justified?
- Whether construction period claimed by the petitioner is justified?
- Whether the terms and conditions of debt claimed by the petitioner are justified?
- Whether EPC cost as claimed by the petitioner is justified?
- Whether other project costs as claimed by the petitioner are justified?
- Whether return on equity as claimed by the petitioner is justified?
- Whether O &M costs claimed by the petitioner are justified?
- Whether insurance during operations as claimed by the petitioner is justified?
- Whether other matters namely payment of bonus energy, application of correction factor and pre-COD sale of energy as claimed by the petitioner are justified?

5. **Whether due to submission of incomplete information regarding financing structure, to decide the petition on the basis of available record or to dismiss it?**

5.1 The petitioner had submitted in the petition that due to uncertainties associated with regards to arrangement of financing, its debt mix is based on the proportion of local and foreign financing expected to be arranged and had requested to allow adjustments in the debt mix and cost of funds based on actual at the time of achievement of financial close. The petitioner had also claimed cost of Asian Development Bank (hereinafter referred to as "ADB") 'Renewable Energy Development Sector Investment Program Guarantee Facility' (hereinafter referred to as "REDSIP facility") on the full foreign financing proposed to be procured by it and ECA/Sinosure fees of US $ 4.421 million. In response to letter of the Authority requiring it to provide its final capital structure along with other necessary information, the petitioner through letter no. TP-11/MWEL/2011 dated: April 13, 2012 submitted its final debt terms. However, the Authority observed that the petitioner despite claiming the final debt terms, failed to identify its potential lenders, produce any document signed by its potential lenders regarding their interest in financing the project and indicating terms/conditions offered by them, provide any document in support of its claim of ECA/Sinosure fees, etc.

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5.2 The Authority in view of circumstances of the case has decided to determine tariff of the petitioner on the basis of available record and has further decided to consider the financing structure as claimed in the petition and subsequently confirmed as final by the petitioner, for the purposes of this determination.

6. <u>Whether net annual bench mark energy generation as claimed by the petitioner is justified?</u>

6.1 The petitioner has submitted that its net annual benchmark energy generation will be 140.811 GWh. for year 1, 143.830 GWh. for years 2 to 10 and 140.811 GWh. for years 11 to 20, on the basis of its selected wind turbines having hub height of 80 meters. The Authority has observed that the petitioner's year wise claim of net annual benchmark energy is lower than the same estimated in its feasibility study.

6.2 National Transmission and Despatch Company Limited (hereinafter referred to as "NTDC") in its comments has submitted that the probability of exceedance used for calculating net annual benchmark energy generation has not been given in the tariff petition. The petitioner in response to these comments has clarified that its net annual benchmark energy generation calculations are based on P50 probability of exceedance.

6.3 The Authority has observed that AEDB vide letter no. B/3/1/MWEL/07 dated February 14, 2012 has confirmed that the power production estimates in the feasibility study of the petitioner have been verified by it through its international independent consultant RISOE. In view of the verification of generation estimates carried out by RISOE, AEDB has approved the benchmark annual energy generation of 141.07 GWh. for year 1, 144.43 GWh. for years 2 to 10 and 141.07 GWh. for years 11 to 20 as estimated by the petitioner in its feasibility study.

6.4 The Authority on the basis of verification exercise carried out by AEDB and approval of benchmark annual energy by AEDB allows annual benchmark energy generation of 141.07 GWh. for year 1, 144.43 GWh. for years 2 to 10 and 141.07 GWh. for years 11 to 20 as benchmark annual energy for the project.

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7. Whether construction period claimed by the petitioner is justified?

7.1 On a specific inquiry, the petitioner has submitted that it has claimed construction period of 18 months. The Authority has observed that in the recently determined cases of wind power projects, the Authority has allowed maximum project construction period of 18 months. Keeping in view the timeframe considered reasonable for the construction of wind power generation farm of the petitioner, the Authority hereby allows the petitioner maximum project construction period of 18 months. The petitioner is hereby directed that detail of any liquidated damages, penalties, etc. (by whatever name called), actually recovered/recoverable by the petitioner from the EPC contractor, pertaining to the construction period allowed by the Authority, shall be submitted to the Authority for adjustment in the project cost, along with application for allowing tariff adjustments at the commercial operations date (hereinafter referred to as "COD"). Further, the construction start date should be negotiated by the petitioner with the power purchaser and should be incorporated in the energy purchase agreement (hereinafter referred to as "EPA"). The petitioner will be allowed adjustments at the COD for maximum project construction period of 18 months starting from the construction start date stipulated in the EPA.

7.2 The petitioner is hereby directed to ensure that all the terms and conditions relating to construction period in the EPA confirm with the aforesaid terms and conditions allowed by the Authority.

8. Whether the terms and conditions of debt claimed by the petitioner are justified?

8.1 The petitioner has proposed following debt terms:

	Foreign debt	Local debt
Percentage of total debt	50 %	50 %
Interest rate	Six months LIBOR + 4% bank spread + 1% cost of ADB REDSIP facility	Six months KIBOR + 3.00 %
Debt repayment period	10 years plus two years grace period	10 years plus two years grace period
Repayment basis	Semiannual	Semiannual

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8.2 NTDC in its comments has submitted that the interest rate of six months LIBOR plus spread of 5% on foreign financing claimed by the petitioner is on the higher side and has referred to a recent tariff determination of the Authority where interest rate of six months LIBOR plus spread of 4.50% on foreign financing has been allowed by the Authority. Punjab Power Development Board (hereinafter referred to as "PPDB") in its comments has submitted that the financing may be structured with following maximum ceilings of interest rates:

- Foreign debt - 3 months LIBOR plus 4.50% (including cost of ADB REDSIP facility)
- Local debt - 3 months KIBOR plus 3%

8.3 The Authority has considered the foreign debt terms proposed by the petitioner and considering the circumstances of the case has decided to allow spread of 4.50% over six months LIBOR to the petitioner for its foreign financing. This allowed spread of 4.50% on foreign financing is inclusive of the cost of ADB REDSIP facility, for which no separate cost will be allowed at later stages. The Authority has further noted that the terms and conditions of local debt claimed by the petitioner are reasonable. The Authority allows all the proposed terms and conditions of debt detailed above in paragraph 8.1 to the petitioner, with the exception of interest rate on foreign financing, which has been restricted to six months LIBOR plus spread of 4.50% as detailed above.

8.4 The Authority directs the petitioner to try to negotiate better financing terms than the one's allowed by the Authority. If the petitioner arranges better terms, the overall impact of reduction in debt servicing will be shared on yearly basis in the following ratio:

Power purchaser / Government : Petitioner = 60 : 40

9. <u>Whether EPC cost as claimed by the petitioner is justified?</u>

9.1 The petitioner has requested for allowing EPC cost of US $ 109.328 million and has provided following break-up of EPC cost:

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	US $ in millions
Off shore agreement price	91.800
On shore agreement price	16.200
	108.000
Letter of credit confirmation charges	1.328
Total EPC cost	109.328

9.2 The petitioner has submitted that it conducted thorough research of various wind turbine suppliers and EPC contractors in the global wind power generation EPC industry. After short listing various technologies and wind turbine vendors, they were invited, either themselves or through designated EPC contractors, to provide turnkey EPC solutions. In response 'Expressions Of Interest' from various international wind turbine suppliers and EPC contractors were received including Vestas from Denmark, Gamesa from Spain, Nordex from Germany/China and General Electric/China Machinery & Equipment Import & Export Corporation from China. After due diligence and intense negotiations with various wind turbine suppliers and EPC contractors, they selected General Electric wind turbine model 1.5 XLE and a consortium of China Machinery Engineering Corporation and China East Resource Import & Export Corporation as turn-key EPC contractors. The petitioner has submitted that the EPC cost includes the turn key price being charged by the EPC contractors plus letter of credit confirmation charges. Further, withholding tax payable on onshore component of EPC price is included in the EPC cost.

9.3 NTDC in its comments has submitted that they anticipate that a bigger sized wind turbine without increasing the hub height would have resulted into higher energy yield. They further submitted that such an option would have occupied lesser farm space and would have given benefit of other technological improvements in terms of efficiency and life of wind turbines. The petitioner in response to these comments has submitted that various wind turbines ranging from 1.5 MW to 2.5 MW were analyzed and evaluated by their technical consultants. After detailed evaluation and intense negotiations, General Electric 1.5 XLE was selected as the optimal wind turbine for the site. Major reasons for selection of the General Electric 1.5 XLE wind turbine included:

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- General Electric 1.5 XLE wind turbine is the latest state of the art wind turbine replacing General Electric work horse 1.5 MW SLE

- The 1.5 MW series is General Electric's most widely deployed wind turbine worldwide with 16,500 wind turbines of this series currently operational worldwide. In addition, General Electric has also offered the monthly energy yield guarantee for the first ten years of the project.

9.4 NTDC in its comments has further submitted that the capability of wind turbines with respect to sustaining maximum efficiency during the high ambient temperature phase is highly important. With the increase of temperature in the project area, loss of efficiency is likely to occur causing a reduction in the output power. However, operating thresholds with respect to temperature and other basic operating limits of wind turbine generators are not given in the tariff petition. The petitioner in response to these comments has submitted that it has selected wind turbines after a thorough due diligence by technical consultant of the project. The ability of wind turbines to operate at high temperature was one of the key points considered by the technical consultant while selecting the wind turbines. In addition to this, other wind characteristics (such as humidity, air density, etc.) experienced in the Jhampir region were also considered while selecting the technology. General Electric (the wind turbine manufacturer) has guaranteed that the wind turbine will operate upto a maximum ambient temperature of 50° C at hub height.

9.5 PPDB in its comments has submitted that the modalities/course of action undertaken to arrive at EPC cost have not been disclosed in the petition. PPDB has suggested that the petitioner may be required to provide further details of EPC cost for enabling the Authority to arrive at a prudent decision. The petitioner in response has submitted that the process adopted for selection of the EPC contractors and finalization of EPC price is already detailed in the petition. Further, EPC contract structure is basically a lump-sum, non-escalable, fixed price, turn-key solution and itemized costs generally do not form part of the EPC contracts, as risk against cost escalation of items resides with the EPC contractors and the owner is not making payment for any specific item but rather for the entire facility as a whole.

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9.6 In addition to the cost of EPC agreements, the petitioner has also claimed US $ 1.328 million as confirmation charges of the letter of credit to be opened in favor of the EPC contractor. The Authority has noted that for wind power projects, keeping in view their size, the letter of credit confirmation charges have been separately allowed by the Authority in the past. The Authority has further noted that the letter of credit confirmation charges claimed by the petitioner are on the higher side and do not compare favorably with the same claimed by some other projects. The Authority keeping in view the aforementioned facts has assessed US $ 1.200 million as maximum ceiling for letter of credit confirmation charges of the petitioner. These charges will be adjusted at COD on actual basis, not exceeding the maximum ceiling of US $ 1.200 million, upon production of verifiable documentary evidence to the satisfaction of the Authority.

9.7 The Authority has further noted that the EPC cost claimed by the petitioner is comparable to EPC costs allowed to other wind power projects. In the light of available documentary evidence and comparability of this cost with other projects, the Authority hereby approves the EPC cost of US $ 109.200 million (inclusive of letter of credit confirmation charges of US $ 1.200 million).

10. <u>Whether other project costs as claimed by the petitioner are justified?</u>

10.1 The other project costs claimed by the petitioner are as follows:

	US$ in millions
Non-EPC costs	1.712
Project development costs	3.700
Land cost	0.088
Taxes and customs duty	0.780
Pre-COD insurance cost	1.476
Financial charges	3.523
ECA / Sinosure fees	4.421
Permanent working capital	0.997
Interest during construction	7.652
Total	24.349

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The above costs are discussed in the following paragraphs:

10.2 Non-EPC Costs

10.2.1 The petitioner has submitted that non-EPC costs include the cost of items that are not part of the EPC contractors' scope of work pursuant to the executed EPC contracts and has provided following break-up of non-EPC costs:

	US $ in millions
Fixed assets	0.480
Project administration office costs	0.341
Cost of accommodation	0.260
Security for expats	0.307
Data connectivity with power purchaser	0.324
Total non-EPC costs	1.712

10.2.2 According to the petitioner, the abovementioned heads comprise of the following costs:

Fixed assets
This includes cost of wind measurement mast, vehicles, furniture plus fixtures and telecommunication equipment.

Project administration office costs
This includes costs associated with rent, utilities, equipment inspection, vehicles fuel, vehicles maintenance and other allied expenses.

Cost of accommodation
This also includes the cost of construction of a residential facility for providing housing facility to the O & M staff. A 'fit for purpose' residential facility has been planned at project site to accommodate necessary staff. This facility is not intended to cater for families of the operating staff.

Security for expats
This represents the costs to be incurred for security arrangements.

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Data connectivity with power purchaser
This includes the expenses to be incurred for procurement and installation of various equipments, materials, etc. relating to data connectivity with the power purchaser.

10.2.3 PPDB in its comments has submitted that the benchmarks already established in case of other IPPs' with similar technology should prevail in the case of the petitioner for this cost head.

10.2.4 The Authority has observed that there is a possibility of interchangeability in classification of some of the costs claimed under the head of non-EPC costs and project development costs. The Authority has therefore concluded that it would be better to assess the costs claimed by the petitioner under this head and project development costs collectively. Accordingly decision of the Authority regarding aggregate costs assessed in this regard is given in the proceeding paragraph 10.3.4.

10.3 Project Development Costs

10.3.1 The petitioner has provided following break-up of project development costs:

	US $ in millions
Project feasibility studies and cost of technical consultants	1.279
Permits, licenses, fees for company formation and cost of performance guarantee to be furnished to AEDB	0.320
HR costs	0.937
Travelling expenses	0.358
Financial and legal advisers fees	0.806
Total project development costs	3.700

10.3.2 According to the petitioner, this cost head includes costs of feasibility studies, topographical survey of land, preliminary geotechnical investigation of land, wind resource data, environment study, grid interconnection and other studies, fees of consultants, costs related to the performance guarantee to be furnished to AEDB,

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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 the Authority, costs incurred during formation of the company and costs related to various permits for the project.

10.3.3 PPDB in its comments has submitted that the Authority while allowing this cost may take into consideration benchmarks already established for this cost component in case of other IPPs' with similar technology.

10.3.4 The Authority has observed that the petitioner has claimed under non-EPC costs and project development costs an aggregate amount of US $ 5.412 million and has also claimed land cost separately. The Authority noted that cost claims of the petitioner are on higher side. After scrutiny of the information provided by the petitioner and on the basis of other available information, the Authority has assessed an aggregate amount of US$ 3.872 million under this cost head which is accordingly being allowed.

10.4 Land Cost

10.4.1 The petitioner has claimed land cost of US $ 0.088 million and has submitted that it includes land lease costs, land demarcation costs, right of way of land, stamp duty, registration fees and costs of survey. The Authority in accordance with the previous practice has considered this cost as a part of operating costs/non-EPC costs and accordingly disallows the entire cost claimed here.

10.5 Taxes and Customs Duty

10.5.1 The petitioner has requested for allowing duties and taxes of US $ 0.780 million and has submitted that it has assumed that Sindh Infrastructure Development Surcharge will be levied @ 0.85% on the imports for the project, while all other duties and taxes have been assumed as nil. The petitioner has requested that any taxes (customs duty/sales tax/special excise duty/income tax/federal excise duty) which are levied, the same should be reimbursed on the basis of actual levy at the COD stage.

10.5.2 The Authority has considered the request of the petitioner and has decided to allow duties and taxes of US $ 0.780 million in accordance with the request of the

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petitioner. Further, adjustment of duties and taxes on actual at COD stage, will be allowed for only those duties and taxes which are imposed on the petitioner. Adjustment of taxes/duties payable on fees/charges, etc. of various third parties, not directly imposed on the petitioner, will not be allowed. The mechanism for adjustment of duties and taxes at actual on COD is detailed in paragraph (I) (b) of the order.

10.6 Pre-COD Insurance Cost

10.6.1 The petitioner has claimed US $ 1.476 million on account of insurance expense during the project construction period. The petitioner has also submitted that the insurance cost does not include administrative surcharge, federal insurance fees and federal excise duty as these are assumed as pass through costs.

10.6.2 The Authority has in comparable cases allowed insurance during construction with maximum ceiling of 1.35% of EPC cost. Accordingly, the petitioner is allowed US$ 1.474 million on account of pre-COD insurance cost claimed by it. This cost will be subject to adjustment at COD on the basis of actual expense, duly verifiable with the relevant supporting documents, up to a maximum limit of 1.35% of the approved EPC cost. The mechanism for adjustment of any duties and taxes imposed on the petitioner is detailed in paragraph (I) (b) of the order.

10.7 Financial Charges

10.7.1 The petitioner has claimed US $ 3.523 million on account of financial charges and has submitted that the claimed financial charges include the lenders' up-front fees, commitment fees, charges related to various letters of credit to be established in favor of various contracting parties (other than letter of credit confirmation charges for payments to be made to the EPC contractor), fees payable and stamp duty applicable on the financing documents, agency fees, security trustee fee, lender's project monitoring fee and the fees for lender's various advisors.

10.7.2 The petitioner has submitted that the financial charges proposed are in excess of 3% of the total debt amount, normally allowed by the Authority, due to the following reasons:

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- The cap of 3% of debt amount was introduced for thermal power projects which are much larger in size than a 50 MW wind power project. All fixed financial charges remain unchanged irrespective of the size of the project, therefore cap of 3% of debt on financial charges for wind power projects of 50 MW is unrealistic.

- The petitioner has included a foreign currency loan in its capital structure. Arrangement and commitment fees for foreign financing are significantly higher than for local financing and have resulted in higher financial charges.

- The Authority has allowed financial charges in excess of 3% of the debt amount to some other projects.

10.7.3 NTDC in its comments has submitted that the financial charges claimed are on higher side compared to the financial charges already allowed by the Authority to various wind power projects and has suggested that the petitioner may be required to negotiate these financial charges with the lenders to achieve an optimal figure. PPDB has commented that financial charges should be restricted to the benchmark of 3% already established by the Authority.

10.7.4 The Authority has considered the claim of the petitioner and has observed that for wind power projects with foreign debt, the Authority has allowed financial charges up to maximum limit of 3% of the debt (excluding the impact of interest during construction and financial charges) in its recent tariff determinations. The Authority further noted that the precedent cases quoted by the petitioner are not comparable to the wind power projects. The Authority has accordingly decided to allow the financial charges of US $ 2.595 million to the petitioner. These financial charges are subject to adjustment at COD on the basis of actual expense, up to a maximum of 3% of the allowed debt (excluding the impact of interest during construction and financial charges), on production of authentic documentary evidence.

10.8 <u>ECA/Sinosure fees</u>

10.8.1 The petitioner has claimed US $ 4.421 million on account of export credit agency or investment insurance agency fees. The petitioner has submitted that 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)

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and cost of this insurance has only been charged on foreign portion of debt financing. The petitioner has further submitted that this fee is expected to be paid upfront and will provide coverage for entire term of the foreign lenders exposure in the project.

10.8.2 The Authority has considered the claim of the petitioner and has observed that the petitioner has neither been able to identify its potential foreign financers nor has been able to submit any document in support of its claim. In the absence of any supporting documentation, the Authority cannot consider this claim and accordingly disallows the entire claimed amount of US $ 4.421 million on account of ECA/Sinosure fees.

10.9 Permanent working capital

10.9.1 The petitioner has claimed permanent working capital of US $ 0.997 million and has submitted that under the terms of EPA, the petitioner will invoice the power purchaser for the settlement of monthly energy payment on or after the first day of the next month to which the monthly energy payment relates. The power purchaser is required to make payment of the same by the thirtieth day following the day of submission of the invoice. Keeping in view this inflow of funds, the petitioner has argued that an inherent mismatch in the availability of cash flows for meeting the following payments exists:

- The petitioner 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 i.e. earlier than the date of collection of invoice from the power purchaser.

- The petitioner would be making payments to the operations and maintenance contractor monthly 15 days in arrears whereas the same will be recovered from the power purchaser 30 days in arrears.

- The terms of debt financing stipulate repayment of debt on semiannual basis commencing from COD. As the petitioner would have only received 5 months of revenue in accordance with the 30 days payment terms under the EPA, thus a payment shortfall of 1/6th of the debt installment would be created which needs to be financed through working capital.

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10.9.2 The petitioner has further submitted that permanent working capital will also reduce its default risks emanating from the considerable time lags in the receipt of payments from the power purchaser. The petitioner has explained that keeping in view the fact that working capital for post COD period has not been allowed by the Authority in earlier cases, permanent working capital should be allowed to be injected upfront, in replacement of revolving credit line from banks. Further, the petitioner has requested for allowing onetime adjustment in the permanent working capital facility at the COD.

10.9.3 NTDC in its comments has submitted that the petitioner has claimed permanent working capital facility in replacement of revolving credit lines from banks. However, in case of renewable energy projects no fuel cost is involved therefore permanent working capital facility is not justified. PPDB has also opposed the approval of working capital claimed by the petitioner.

10.9.4 The Authority has noted that working capital cost/permanent working capital has not been allowed to any wind power project, as the Authority considers that arguments forwarded in its support do not justify the claim. Further, some of the wind power projects have even not claimed this cost. The Authority further noted that according to the billing mechanism provided in the EPA, an IPP also gets paid for certain components of tariff such as return on equity, debt servicing for the five months preceding the debt payment due date, etc. in advance which have not been highlighted by the petitioner. In view of the grounds detailed above the Authority declines the request of the petitioner to allow permanent working capital of US $ 0.997 million as a part of the project cost.

10.10 <u>Interest During Construction</u>

10.10.1 The petitioner has estimated an amount of US$ 7.652 million on account of interest during the project construction period (hereinafter referred to as "IDC") in its tariff petition. Based on the financing and other terms/conditions allowed to the petitioner the Authority has assessed IDC as US $ 7.846 million. The IDC will be adjusted at COD on the basis of actual debt draw downs (within the overall debt allowed by the Authority at COD), actual PKR/US$ exchange rate variation for foreign loan denominated in US $ and actual interest rates not exceeding the limit of 6 months

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KIBOR plus 3% for local financing and 6 months LIBOR per annum plus 4.50% for foreign financing, during the project construction period allowed by the Authority.

11. Recapitulating the approved project cost for the petitioner under various heads is given hereunder:

	Approved US $ in millions
EPC cost as per the EPC contract	108.000
Letter of credit confirmation charges	1.200
Non-EPC costs and project development costs	3.872
Taxes and customs duty	0.780
Pre-COD insurance	1.474
Financial charges	2.595
Interest during construction	7.846
Total Project Cost	125.767

12. Whether return on equity as claimed by the petitioner is justified?

12.1 The petitioner has requested for allowing 17% return on equity (IRR based). The Authority has already allowed 17% return on equity (IRR based) to other wind power projects, therefore the same is allowed to the petitioner.

12.2 The Authority has further noted that the petitioner has not included return on equity during construction (hereinafter referred to as "ROEDC") in its tariff computations and has requested for allowing the same at the COD stage. The Authority considering the terms and conditions allowed to the petitioner, and the fact that ROEDC is adjustable at COD, has assessed ROEDC as Rs. 384.392 million (US $ 4.378 million) whose impact has been included in the tariff. The ROEDC will be adjusted at COD on the basis of actual equity injections (within the overall equity allowed by the Authority at COD) during the project construction period allowed by the Authority.

13. Whether O &M costs claimed by the petitioner are justified?

13.1 The petitioner has claimed following O & M costs per annum:

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Years	Outsourced cost	Other costs	Total
	US $ in millions		
01 – 02	1.075	0.715	1.790
03 – 10	2.500	0.850	3.350
11 – 20	2.750	0.850	3.600

13.2 The petitioner has submitted that its outsourced O&M arrangement prices 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. The O & M costs for the first two years are lower compared to the succeeding years as O & M activity for the first two years will be carried out by the EPC contractor as part of its warranty obligations. From third year onwards, O & M of the project will be carried out by the O & M contractor. After ten years, a cost and benefit analysis of carrying out the O & M work in house or again outsourcing the work to the O & M contractor will be carried out. The O & M cost for the last ten years is estimated 10% higher than the O & M cost for the years 03 to 10, as the entire equipment would require considerably higher costs to maintain in later part of its life than during the initial ten years.

13.3 The petitioner has submitted that besides cost of outsourcing the O & M activity, O & M costs include costs of the following:

- Fixed assets
- Payroll and allied expenses
- Vehicles fuel and maintenance
- Land lease cost payable to AEDB
- Other administrative costs
- Taxes on imported spare parts
- DSRA SBLC
- Lenders related costs

13.4 PPDB in its comments has submitted that the O & M costs claimed by the petitioner are on higher side when compared with the same approved by the Authority for other

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IPPs with similar technology. PPDB has suggested that in spite of the O & M contracts, expenses under this head should be compared and rationalized in line with costs allowed to other projects based on the same technology. NTDC has also submitted that the O & M costs claimed by the petitioner are high and has suggested that the O & M cost of the petitioner should be restricted by the Authority to the same level as allowed to a comparable wind power project.

13.5 The Authority is of the opinion that O & M costs claimed by the petitioner need to be rationalized. After detailed scrutiny of the information provided by the petitioner, comparison with the O & M costs already allowed to similar projects and information otherwise available, the Authority has assessed the following O & M costs of the petitioner (including land costs disallowed as a part of the project cost as discussed in preceding part of this determination):

Years	US $ in millions
01 – 02	1.183
03 – 10	2.300
11 – 20	2.405

13.6 The Authority is cognizant of the fact that for some years O & M costs allowed to the petitioner do not even cover the cost of outsourced O & M activity claimed by it. The Authority however cannot pass on the burden of costs considered excessive by it to the consumers. The allowed O & M costs have been further subdivided into foreign component and local component in the same ratio as claimed in the tariff petition.

14. <u>Whether insurance during operations as claimed by the petitioner is justified?</u>

14.1 The petitioner has requested for allowing US $ 1.080 million per annum as insurance expense in the post-COD 20 years of tariff control period. The cost of insurance claimed by the petitioner is 1% of the aggregate cost of its EPC agreements. The petitioner has also submitted that any increases upto 1.35% of the EPC cost will be charged at actual. Moreover the petitioner has requested for allowing indexation of US $ to PKR for this cost.

14.2 The Authority considers the requested insurance cost of US $ 1.080 million per annum claimed by the petitioner as reasonable and hereby allows the same. In case of

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insurance denominated in US $, insurance cost component of tariff will be adjusted on account of US$/PKR exchange rate variation on annual basis. Further, insurance component of the reference tariff will be adjusted as per actually incurred prudent costs, subject to maximum of 1.35% of the approved EPC cost, on annual basis upon production of authentic documentary evidence by the petitioner.

15. Whether other matters namely payment of bonus energy, application of correction factor and pre-COD sale of energy as claimed by the petitioner are justified?

15.1 Bonus energy

The petitioner has submitted that it should be explicitly stated in the determination that bonus energy payment should be made on monthly basis. NTDC in its comments has submitted that the Authority should consider the fact that bonus energy is established only when the project achieves the annual benchmark energy as monthly payment of bonus energy is not workable.

The Authority has considered the issue and has observed that consistent with its previous decisions, bonus is allowed for supply of electric power in excess of annual benchmark energy generation in the instant tariff determination, and payment of bonus energy shall be made accordingly.

15.2 Correction factor

The petitioner has requested the Authority to allow following correction factor formula to be applied to the monthly energy generation to be used for calculation of the monthly energy payment:

$$\text{Correction factor} = \frac{\text{(Sum of monthly bench mark energy for a year /12)}}{\text{Monthly benchmark energy for the relevant month}}$$

The petitioner has argued that the energy produced for a given month is directly dependent on the wind speed for that month. Wind speed varies significantly from month to month resulting in erratic project cash flows, thus hampering the petitioner's debt servicing capability. The petitioner has submitted that the

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application of correction factor will not impact its total annual revenues. NTDC has opposed the application of correction factor formula proposed by the petitioner.

The Authority has considered the request of the petitioner and has noted that:

- This correction factor formula has not been allowed to any other wind power project by the Authority.

- To harmonize the cash flows of wind power projects, the Authority already allows wind power projects semi-annual debt repayment, as against quarterly debt repayment normally allowed in case of other projects.

- Due to application of correction factor formula, annual revenues of the petitioner will be impacted, in case the petitioner fails to supply the benchmark energy due to problems at its own end.

Keeping in view the aforementioned facts, the Authority does not accept the request of the petitioner to allow the application of proposed correction factor formula.

15.3 <u>Pre COD sale of energy</u>

The petitioner has requested the Authority to allow it 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 operations minus the debt servicing component of tariff.

NTDC in its comments has submitted that as per precedent of EPA with FFC Energy Limited, the power purchaser has no obligation to pay for the net delivered energy to the interconnection point during testing. This is because as a matter of principal all such costs, if any, are to be capitalized. Moreover in case of thermal IPPs' for test energy prior to COD the power purchaser is required only to pay the fuel component. In case of wind power no fuel is consumed therefore the power purchaser shall have no obligation to pay for any net electrical output during testing. NTDC has requested for continuation of the prevailing policy. PPDB in its comments has suggested that the Authority may consider claim of the petitioner subject to partial payment of fixed O & M cost components of the tariff only or as agreed between the parties to the EPA.

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The Authority has in earlier comparable determinations allowed sale of electricity prior to COD pursuant to bilateral agreement on mutually agreed terms between the buyer and the seller. The Authority here by maintains its decision on this issue in the case of the petitioner. The mutually agreed tariff for pre COD sale of energy shall in no case be higher than the tariff determined by the Authority minus the debt servicing component of tariff.

16. Order

Pursuant to Rule 6 of the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000, Master Wind Energy Limited (the petitioner) is allowed to charge the following specified/approved tariff for delivery of electricity to the power purchaser:

Tariff Components	Year 1	Year 2	Years 3-10	Years 11-20	Indexation
	Rs./kWh.	Rs./kWh.	Rs./kWh.	Rs./kWh.	
O&M					
Local	0.2941	0.2873	0.3548	0.3534	WPI
Foreign	0.4422	0.4319	1.0434	1.1434	PKR/US$ & US CPI
Insurance	0.6722	0.6565	0.6565	0.6722	PKR/US$
Return on equity	3.3267	3.2493	3.2493	3.3267	PKR/US$
Return on equity during construction	0.4842	0.4729	0.4729	0.4842	PKR/US$
Debt service	9.5689	9.3463	9.3463	-	PKR/US$ & LIBOR for foreign loan and KIBOR for local loan

i) The reference tariff has been calculated on the basis of installed capacity of 49.50 MW and following net annual benchmark energy generation:

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Year(s)	Net annual benchmark energy generation
	GWh.
01	141.07
02 -10	144.43
11 – 20	141.07

ii) The above charges will be limited to the extent of above specified net annual energy generation. Net annual energy generation supplied to the power purchaser in a year, in excess of net annual benchmark energy generation for the relevant year, will be charged at 10% of the prevalent approved tariff.

iii) In the above tariff no adjustment for carbon emission reduction receipts, has been accounted for. However, upon actual realization of carbon emission reduction receipts, the same shall be distributed between the power purchaser and the petitioner in accordance with the approved mechanism given in the GoP Policy for Development of Renewable Energy for Power Generation 2006, as amended from time to time.

iv) The reference PKR/dollar rate has been taken as 87.80.

v) The above tariff is applicable for a period of twenty (20) years commencing from the commercial operations date (COD).

vi) The monthly benchmark energy table along with monthly power curves should be verified by the Alternative Energy Development Board (AEDB)/power purchaser before finalization of energy purchase agreement.

vii) The petitioner is entitled to payment of wind speed risk by the power purchaser in accordance with the GoP Policy for Development of Renewable Energy for Power Generation 2006, as amended from time to time and the mechanism approved by the AEDB.

viii) The component wise reference tariff is indicated at Annex-I.

ix) Debt servicing schedule is attached as Annex-II.

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I. One Time Adjustments

The following onetime adjustments shall be applicable to the reference tariff:

a. Confirmation charges for the letter of credit to be opened in favor of the EPC contractor will be adjusted at COD on actual basis, not exceeding the maximum ceiling of US $ 1.200 million, upon production of verifiable documentary evidence to the satisfaction of the Authority.

b. Duties and/or taxes, not being of refundable nature, imposed on the petitioner upto the commencement of its commercial operations will be subject to adjustment at actual on COD, as against US $ 0.780 million allowed now, upon production of verifiable documentary evidence to the satisfaction of the Authority.

c. Insurance will be adjusted as per actually incurred prudent costs, subject to maximum limit of 1.35% of the approved EPC cost, on production of authentic documentary evidence to the satisfaction of the Authority at the time of COD tariff adjustments.

d. Financial charges will be adjusted at COD on the basis of actual expense, up to a maximum of 3% of the total debt allowed (excluding the impact of interest during construction and financial charges), on production of authentic documentary evidence.

e. Interest during construction will be adjusted at COD on the basis of actual debt draw downs (within the overall debt allowed by the Authority at COD), actual PKR/US$ exchange rate variation for foreign loan denominated in US $ and actual interest rates not exceeding the limit of 6 months KIBOR plus 3% for local financing and 6 months LIBOR plus 4.50% for foreign financing, during the project construction period allowed by the Authority. The allowed spread of 4.50% on foreign financing is inclusive of cost of ADB REDSIP facility.

f. The return on equity (including return on equity during construction) will be adjusted at COD on the basis of actual equity injections (within the overall equity allowed by the Authority at COD) during the project construction period allowed by the Authority.

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g. The return on equity (including return on equity during construction) will be adjusted at COD on the basis of PKR/US$ exchange rate variation.

h. All project costs i.e. costs incurred prior to COD have been allowed in the determination in US$ as the exact currency of payment is not known yet. At the COD for all project costs payable in PKR, the amounts allowed in US $ will be converted into PKR using the reference PKR/dollar rate of 87.80.

i. Any liquidated damages, penalties, etc. (by whatever name called), actually recovered/recoverable by the petitioner from the EPC contractor(s), pertaining to the construction period allowed by the Authority, will be adjusted in the project cost.

j. The reference tariff table shall be revised at COD while taking into account the above adjustments. The petitioner shall submit its request to the Authority within 90 days of COD for necessary adjustments in tariff.

II. <u>Pass-Through Items</u>

No provision for income tax has been accounted for in the tariff. If any tax is imposed on the petitioner, the exact amount paid by the petitioner shall be reimbursed by the power purchaser to the petitioner on production of original receipts. This payment will be considered as a pass-through payment spread over a 12 months period. Furthermore, in such a scenario, the petitioner shall also submit to the power purchaser details of any tax shield savings and the power purchaser shall deduct the amount of these savings from its payment to the petitioner on account of taxation.

Withholding tax on dividends is also a pass through item just like other taxes as indicated in the government guidelines for determination of tariff for new IPPs. The power purchaser shall make payment on account of withholding tax at the time of actual payment of dividend, subject to maximum of 7.5% of 17% return on equity (including return on equity during construction). In case the petitioner does not declare a dividend in a particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what is paid in that year and the total entitlement as per the net return on equity) would be carried forward and accumulated so that the petitioner is able to recover the same as a pass through from the power purchaser in future on the basis of the total dividend payout.

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III. <u>Indexations:</u>

The following indexation shall be applicable to the reference tariff:

i) <u>Indexation applicable to O&M</u>

The local part of O&M cost will be adjusted on account of local inflation and O&M foreign component will be adjusted on account of variation in dollar/rupee exchange rate parity and US CPI. Quarterly adjustments for inflation and exchange rate variation will be made on 1st July, 1st October, 1st January and 1st April respectively on the basis of latest available information with respect to WPI (notified by the Federal Bureau of Statistics)/alternative index determined by the Authority, US CPI (notified by US bureau of labor statistics) and revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexation will be as follows:

$$F\ O\&M_{(LREV)} = O\&M_{(LREF)} * WPI_{(REV)} / 209.470$$

$$F\ O\&M_{(FREV)} = O\&M_{(FREF)} * US\ CPI_{(REV)} / 226.230 * ER_{(REV)} / 87.80$$

Where:

$F\ O\&M_{(LREV)}$	=	The revised applicable fixed O&M local component of tariff
$F\ O\&M_{(FREV)}$	=	The revised applicable fixed O&M foreign component of tariff indexed with US CPI and exchange rate variation
$O\&M_{(LREF)}$	=	The reference fixed O&M local component of tariff for the relevant period
$O\&M_{(FREF)}$	=	The reference fixed O&M foreign component of tariff for the relevant period
$WPI_{(REV)}$	=	The revised wholesale price index (manufactures) / alternative index determined by the Authority
$WPI_{(REF)}$	=	209.470 wholesale price index (manufactures) of July

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2011 notified by the Federal Bureau of Statistics / alternative index determined by the Authority (refer to proceeding note).

US CPI $_{(REV)}$	=	The revised US CPI (all urban consumers)
US CPI $_{(REF)}$	=	226.230 US CPI (all urban consumers) for the month of November 2011 as notified by the US Bureau of Labor Statistics
ER $_{(REV)}$	=	the revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

Note: At the time of this determination, the Authority is still in the process of establishing an alternative index for WPI (manufactures) which has been discontinued by the Federal Bureau of Statistics since August 2011. Pending the determination of alternative index by the Authority the last available WPI (Manufactures) for the month of July 2011 has been used as reference. Upon determination of alternative index by the Authority, reference indexation value shall be replaced with the alternative index value for the month of November 2011.

ii) Adjustment of insurance component

In case of insurance denominated in US $, insurance cost component of tariff will be adjusted on account of US$/PKR exchange rate variation on annual basis. Further, insurance component of the reference tariff will be adjusted as per actually incurred prudent costs, subject to maximum of 1.35% of the approved EPC cost, on annual basis upon production of authentic documentary evidence by the petitioner.

iii) Return on equity

The return on equity component of tariff will be adjusted on the basis of revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan according to the following formula:

$$ROE_{(REV)} = ROE_{(REF)} \times ER_{(REV)} / ER_{(REF)}$$

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Where:

$ROE_{(REV)}$	=	Revised return on equity component of tariff expressed in Rs/kWh.
$ROE_{(REF)}$	=	Reference return on equity component of tariff expressed in Rs/kWh.
$ER_{(REV)}$	=	The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan
$ER_{(REF)}$	=	The reference TT & OD selling rate of US dollar

iv) <u>Return on equity during construction</u>

The return on equity during construction component of tariff will be adjusted on the basis of revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan according to the following formula:

$$ROEDC_{(REV)} = ROEDC_{(REF)} \times ER_{(REV)} / ER_{(REF)}$$

Where:

$ROEDC_{(REV)}$	=	Revised return on equity during construction component of tariff expressed in Rs/kWh.
$ROEDC_{(REF)}$	=	Reference return on equity during construction component of tariff expressed in Rs/kWh.
$ER_{(REV)}$	=	The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan
$ER_{(REF)}$	=	The reference TT & OD selling rate of US dollar

v) <u>Adjustment for LIBOR/KIBOR variation</u>

The interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to variation in 6 months LIBOR/KIBOR, while

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spread of 4.50% on 6 months LIBOR and 3% on 6 months KIBOR remaining the same, according to the following formula:

For foreign financing

$\Delta I = P_{(REV)} * (LIBOR_{(REV)} - 0.7364\%) / 2$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in 6 months LIBOR. ΔI can be positive or negative depending upon whether 6 months $LIBOR_{(Rev)}$ per annum > or < 0.7364%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each half year under adjustment.

$P_{(REV)}$ = is the outstanding principal (as indicated in the attached debt service schedule to this order at Annex-II) on a biannual basis at the relevant six monthly calculations date.

For local financing

$\Delta I = P_{(REV)} * (KIBOR_{(REV)} - 12.01\%) / 2$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in 6 months KIBOR. ΔI can be positive or negative depending upon whether 6 months $KIBOR_{(Rev)}$ per annum > or < 12.01%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each half year under adjustment.

$P_{(REV)}$ = is the outstanding principal (as indicated in the attached debt service schedule to this order at Annex-II) on a biannual basis at the relevant six monthly calculations date.

Foreign debt and its interest will also be adjusted on bi-annual basis on account of actual variation in PKR/US $ over the applicable reference exchange rate.

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Note:

Adjustments on account of inflation, foreign exchange rate variation, LIBOR/KIBOR variation and actual insurance will be approved and announced by the Authority within fifteen working days after receipt of the petitioner's request for adjustment in tariff in accordance with the requisite indexation mechanism stipulated herein.

IV. Terms and Conditions of Tariff:

Design & Manufacturing Standards:

Wind turbine generation system shall be designed, manufactured and tested in accordance with the latest IEC standards or other equivalent standards. All plant and equipment shall be new.

Wind Power Plant's Performance Data:

The petitioner shall install monitoring masts with properly calibrated automatic computerized wind speed recording meters at the same height as that of the wind turbine generators and a compatible communication/SCADA system both at the wind farm and power purchaser's control room for transmission of wind speed and power output data to the power purchaser's control room.

Emissions Trading/ Carbon Credits:

The petitioner shall process and obtain emissions/carbon credits expeditiously and credit the proceeds to the power purchaser as per the GoP Policy for Development of Renewable Energy for Power Generation 2006, as amended from time.

Other:

The Authority has allowed/approved only those cost(s), term(s), condition(s), provision(s), etc. which have been specifically approved in this tariff determination. Any cost(s), term(s), condition(s), provision(s), etc. contained in the tariff petition or any other document which are not specifically allowed/approved in this tariff

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determination, should not be implied to be approved, if not adjudicated upon in this tariff determination.

AUTHORITY

20 06 12

(Khawaja Muhammad Naeem)
Member

20/6/2012

(Habibullah Khilji)
Member

Note attached —

(Shaukat Ali Kundi) 28.06.2012
Member

28/6

(Ghiasuddin Ahmed)
Acting Chairman

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Annex - I

MASTER WIND ENERGY LIMITED
REFERENCE TARIFF TABLE

Year	O&M		Insurance	Return on equity	Return on equity during construction	Withholding tax @7.5%	Loan repayment	Interest charges	Tariff
	Local	Foreign							
	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh
1	0.2941	0.4422	0.6722	3.3267	0.4842	0.2858	3.7065	5.8624	15.0741
2	0.2873	0.4319	0.6565	3.2493	0.4729	0.2792	3.9533	5.3930	14.7234
3	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	4.3260	5.0203	15.4025
4	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	4.7438	4.6025	15.4025
5	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	5.2131	4.1332	15.4025
6	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	5.7412	3.6051	15.4025
7	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	6.3365	3.0098	15.4025
8	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	7.0086	2.3377	15.4025
9	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	7.7687	1.5776	15.4025
10	0.3548	1.0434	0.6565	3.2493	0.4729	0.2792	8.6297	0.7166	15.4025
11	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
12	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
13	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
14	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
15	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
16	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
17	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
18	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
19	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
20	0.3534	1.1434	0.6722	3.3267	0.4842	0.2858	-	-	6.2657
Levelized	0.3414	0.9477	0.6626	3.2791	0.4772	0.2817	3.8465	2.9228	12.7591

The reference tariff has been calculated on the basis of following net annual benchmark energy generation:

Year	Net annual benchmark energy generation
1	141.07 GWh.
02 - 10	144.43 GWh.
11 - 20	141.07 GWh.

Net annual generation supplied to the power purchaser in a year, in excess of benchmark energy for the relevant year will be charged at 10% of the prevalent approved tariff.

Exchange rate 1 US $ = PKR 87.80 Levelised tariff @ 10% works out to be US cents 14.5320

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Annex - II

MASTER WIND ENERGY LIMITED
DEBT SERVICING SCHEDULE

Year	Local Debt: Principal Million US$	Local Debt: Repayment Million US$	Local Debt: Interest Million US$	Local Debt: Balance Million US$	Local Debt: Total Debt Service Million US$	Foreign Debt: Principal Million US$	Foreign Debt: Repayment Million US$	Foreign Debt: Interest Million US$	Foreign Debt: Balance Million US$	Foreign Debt: Total Debt Service Million US$	Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh	Annual Debt Servicing Rs./kWh
	47.16	1.09	3.54	46.07	4.63	47.16	1.82	1.23	45.34	3.06			
	46.07	1.17	3.46	44.90	4.63	45.34	1.87	1.19	43.47	3.06			
1	**47.16**	**2.26**	**7.00**	**44.90**	**9.26**	**47.16**	**3.70**	**2.42**	**43.47**	**6.12**	3.7065	5.8624	9.5689
	44.90	1.26	3.37	43.65	4.63	43.47	1.92	1.14	41.54	3.06			
	43.65	1.35	3.28	42.29	4.63	41.54	1.97	1.09	39.57	3.06			
2	**44.90**	**2.61**	**6.65**	**42.29**	**9.26**	**43.47**	**3.89**	**2.23**	**39.57**	**6.12**	3.9533	5.3930	9.3463
	42.29	1.45	3.17	40.84	4.63	39.57	2.02	1.04	37.55	3.06			
	40.84	1.56	3.07	39.28	4.63	37.55	2.08	0.98	35.47	3.06			
3	**42.29**	**3.02**	**6.24**	**39.28**	**9.26**	**39.57**	**4.10**	**2.02**	**35.47**	**6.12**	4.3260	5.0203	9.3463
	39.28	1.68	2.95	37.60	4.63	35.47	2.13	0.93	33.34	3.06			
	37.60	1.81	2.82	35.79	4.63	33.34	2.19	0.87	31.16	3.06			
4	**39.28**	**3.49**	**5.77**	**35.79**	**9.26**	**35.47**	**4.32**	**1.80**	**31.16**	**6.12**	4.7438	4.6025	9.3463
	35.79	1.94	2.69	33.85	4.63	31.16	2.24	0.82	28.91	3.06			
	33.85	2.09	2.54	31.76	4.63	28.91	2.30	0.76	26.61	3.06			
5	**35.79**	**4.03**	**5.23**	**31.76**	**9.26**	**31.16**	**4.55**	**1.57**	**26.61**	**6.12**	5.2131	4.1332	9.3463
	31.76	2.24	2.38	29.52	4.63	26.61	2.36	0.70	24.25	3.06			
	29.52	2.41	2.22	27.10	4.63	24.25	2.42	0.63	21.83	3.06			
6	**31.76**	**4.66**	**4.60**	**27.10**	**9.26**	**26.61**	**4.79**	**1.33**	**21.83**	**6.12**	5.7412	3.6051	9.3463
	27.10	2.59	2.03	24.51	4.63	21.83	2.49	0.57	19.34	3.06			
	24.51	2.79	1.84	21.72	4.63	19.34	2.55	0.51	16.78	3.06			
7	**27.10**	**5.38**	**3.87**	**21.72**	**9.26**	**21.83**	**5.04**	**1.08**	**16.78**	**6.12**	6.3365	3.0098	9.3463
	21.72	3.00	1.63	18.72	4.63	16.78	2.62	0.44	14.16	3.06			
	18.72	3.22	1.41	15.50	4.63	14.16	2.69	0.37	11.48	3.06			
8	**21.72**	**6.22**	**3.04**	**15.50**	**9.26**	**16.78**	**5.31**	**0.81**	**11.48**	**6.12**	7.0086	2.3377	9.3463
	15.50	3.46	1.16	12.03	4.63	11.48	2.76	0.30	8.72	3.06			
	12.03	3.72	0.90	8.31	4.63	8.72	2.83	0.23	5.89	3.06			
9	**15.50**	**7.19**	**2.07**	**8.31**	**9.26**	**11.48**	**5.59**	**0.53**	**5.89**	**6.12**	7.7687	1.5776	9.3463
	8.31	4.00	0.62	4.30	4.63	5.89	2.91	0.15	2.98	3.06			
	4.30	4.30	0.32	(0.00)	4.63	2.98	2.98	0.08	(0.00)	3.06			
10	**8.31**	**8.31**	**0.95**	**(0.00)**	9.26	**5.89**	**5.89**	**0.23**	**(0.00)**	**6.12**	8.6297	0.7166	9.3463

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

DECISION OF MR SHAUKAT ALI KUNDI MEMBER NEPRA WITH RESPECT TO DETERMINATION OF THE AUTHOREITY IN THE MATTER OF TARIFF PETITION FILED BY MASTER WIND ENERGY LIMITED

1. After having gone through the record, it is established that the petitioner has failed to furnish essential information in support of its claimed debt structure and costs thereof.

2. In the absence of this information and failure of the petitioner to comply with the directions of the Authority to provide the requisite information, which has material impact on the reference tariff, the determination of tariff do not merit consideration hence I dismiss the petition in terms of Rule 16(2) of NEPRA (Tariff Standards and Procedure) Rules, 1998.

Shaukat Ali Kundi

(Shaukat Ali Kundi) 28.06.2012
Member (Licensing)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY