Zephyr Power (Pvt) Limited

September 30, 2011

Registrar NEPRA
2nd Floor, OPF Building
Shahrah-e-Jamhooriyat
G - 5 / 2,
Islamabad
Pakistan

Dear Sirs,

We are pleased to submit the Tariff Petition for Zephyr Power (Pvt.) Limited, a 50 MW wind farm to be set up in Gharo.

The list of documents being submitted for the Tariff Petition in triplicate are attached as Annexure-I.

The list of documents being submitted for the Generation License are attached as Annexure – II.

Please acknowledge receipt of this letter alongwith the documents as per Annexure-I and Annexure -II.

Yours sincerely,

Zia Khaleeli
Chief Executive

5467
3-10-11

68-B, Sindhi Muslim Housing Society, Karachi-74400, Pakistan.
Tel: 021-4315646, Fax: 021-4315647-48, E-mail: director@zephyrpowerltd.com

Annexure 1 – Tariff Petition

Annexure List

1) Covering Letter
2) Affidavit
3) Board Resolution
4) Signed EPC Contract
5) Signed O&M Contract
6) Feasibility Approval from AEDB
7) Letter of Intent from Bank
8) Pay Order
9) Letter of Intent (LOI) from AEDB
10) Signed Agreement to Lease with AEDB
11) Financial Sheets
    - 11.1) Tariff Calculation Sheets
    - 11.2) Balance Sheet
    - 11.3) Analysis of Financial Statements
    - 11.4) Cash Statement
    - 11.5) Revenue Forecast
    - 11.6) Tariff Table
    - 11.7) Debt Repayment
    - 11.8) Project Profit & Loss Statement
    - 11.9) Cost of Sales

Annexure 2 – Generation License Application

1) Covering Letter
2) Board Resolution
3) Feasibility Study
4) O&M Contract
5) Soil Investigation
6) Electrical Grid Interconnection – Sinovel
7) WTG Technical description
8) List of Technical standards
9) Training Plan
10) Single Line Diagram
11) Project Commissioning Schedule
12) Generation License Fee NEPRA receipt
13) Letter of ZPL re Submission of Grid Study to NTDC (28/12/2010)
14) Letter of ZPL re Conduct Grid Interconnection Study to PPI (16/11/2011)
15) Letter of Ministry of Petroleum (1994)
16) PPI Note re Type 3 DFIG
17) IEE Report
18) Copy of NOC issued from EPA
19) Profile of ACE of 2010
20) Memorandum and Articles of Association
21) Letter of Intent of KASB Bank
22) Certificate of Incorporation
23) Financial Statements of ZPL
24) Reference and Experience of Applicant – Mr. Zia Khaleeli is director of ACE Pvt. LTD. see brochure of ACE for details
25) Grid Study Report
26) ZPL Wind data of 50m mast (data in CD)
27) Topographic maps (data in CD)

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

B/3/1/ZPPL/07

30th September 2011

Mr. Zia Khalili
Chief Executive
Zephyr Power Pvt. Ltd.
68-B, Sindhi Muslim Housing Society
Karachi.

Subject: **PROVISIONAL APPROVAL OF FEASIBILITY STUDY**

This refers to your letter No. Nil dated September 28, 2011 regarding the subject cited above.

2. Alternative Energy Development Board (AEDB) has received the revised Feasibility Study of the 49.5 MW wind power project of M/s Zephyr Power Pvt. Ltd. (ZPPL) which is currently under review. The approval of Feasibility study is linked with the following;

- 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 approval of the IEE study from the relevant agency. However, AEDB observes that the approval of Grid Interconnection study is awaited from the relevant agency. AEDB has initiated the process of verification of production estimates through RISO. AEDB hereby provisionally accepts the feasibility study of the wind power project of M/s ZPPL. The final approval of the feasibility study shall be accorded based on the verification of power production estimates by RISO and approval of Grid Interconnection Study by the relevant agency. M/s ZPPL may however proceed ahead with the application of tariff to NEPRA.

(Syed Aqeel Hussain Jafri)
Deputy Director (Policy)

Copy to:
1. PS to CEO, AEDB.

Zephyr Power (Pvt) Limited

The Registrar,
National Electric Power Regulatory Authority (NEPRA),
OPF Building, 2nd Floor, Shahrah-e-Jamhooriayt, G-5/2,
Islamabad-Pakistan.

Subject: **Tariff Petition for 50 MW Wind Power Project at Gharo of Zephyr Power (Pvt.) Limited**

The company, Zephyr Power (Pvt.) Limited by virtue of Board of Resolution dated 29/09/2011, is pleased to submit Tariff Petition of 50 MW Wind Power Project at Gharo, Sindh. The Tariff Petition is submitted in pursuant to the relevant provision of the NEPRA (Tariff Standards and Procedure Rule, 1998), read with the Provision of the Regulation for Generation Transmission and Distribution of Electric Power Act (XL of 1997) and the Rules and Regulations made there under; And in accordance with the RE Policy 2006; and the Guidelines for Determination of Tariff for Wind Power Generation 2006.

The Company is also submitting the revised Generation License Application along with this Tariff Petition. We request that this Tariff Petition may kindly be considered concurrently with the application for Generation License.

The Tariff Petition (including its Annexures) is submitted in triplicate; with the requisite tariff fee of **PKR** 440,864/- in the form of pay order in the name of National Electric Power Regulatory Authority. The original pay order and affidavit are attached herewith and the copies of the same are annexed to the Petition.

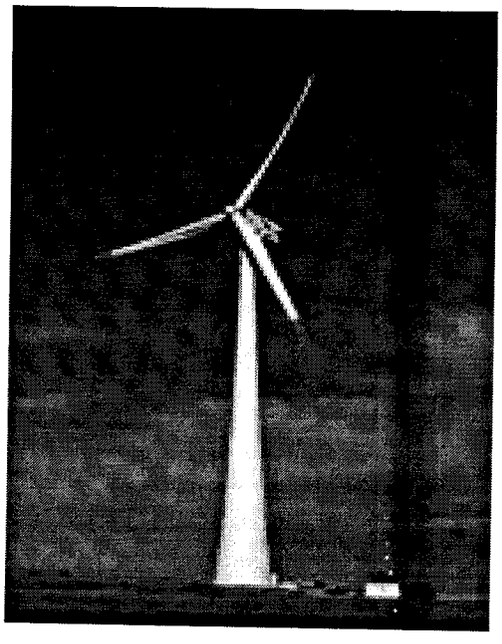
We look forward to NEPRA responding positively for early determination and conclusion in order to achieve the project completion within timelines in the national interest of Pakistan and to develop the renewable energy based power generation capacity in the country.

Thanking you
For and on behalf of Zephyr Power (Pvt.) Limited

Zia Khaleeli
Chief Executive
Zephyr Power (Pvt.) Limited.

68-B, Sindhi Muslim Housing Society, Karachi-74400, Pakistan.
Tel: 021-4315646, Fax: 021-4315647-48, E-mail: director@zephyrpowerltd.com

Tariff Petition



TARIFF PETITION

For

ZEPHYR POWER (PVT.) LIMITED

September 29th, 2011

Table of Contents

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1 DETAILS OF PETITIONER

1.1 Name and Address

ZEPHYR POWER (PVT.) LIMITED ("ZPL", or "the Company")
68-B, S.M.C.H.S., Karachi.
Pakistan.
Tel: +92-21-34315646
Fax: +92-21-34315647

1.2 Representatives

- Mr. Zia Khaleeli, Chief Executive Officer
- Mr. Waqar Ahmad, (Manager Renewable Projects)
- Mr. Khalid Ahmed Khan, Chief Financial Officer

1.3 Basis of Petition

Under the "Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of) 1997, hereinafter referred to as the NEPRA Act, National Electric Power Regulatory Authority ("NEPRA") is responsible, inter alia, for determining tariffs and other terms and conditions for the supply of electricity by the generation, transmission and distribution companies and to recommend these to the Federal Government, subject to the need to comply with guidelines, not inconsistent with the provisions of the NEPRA Act, laid down by the Federal Government. NEPRA is also responsible for determining the process and procedures for reviewing tariff and recommending tariff adjustments.

ZEPHYR POWER (PVT.) LIMITED ("ZPL", "the Company") is a private limited company registered under the Companies Ordinance 1984. ZPL has been setup as a Special Purpose Company to setup and operate power projects. The Company is seeking to develop, own and operate a 50 MW wind farm Independent Power Producer (IPP) Project ("the Project") in the province of Sindh.

The Alternative Energy Development Board issued us a LOI in February 2005. Copy attached.

ZPL hearing for Generation License was held in May 2006, we have resubmitted our Generation Licensee application. All formalities of NEPRA have been adhered to and Issuance of Generation license is expected shortly.

As per Renewable Energy Policy, NTDC has given their consent to purchase power from Zephyr Power to NEPRA.

Zephyr Power is sister company of Omega Ltd which was the pioneer for wind data analysis in Pakistan. Omega identified the site near Gharo in the mid 1990s and entered with a MoU with Zond (of California), PPIB and the New Renewable Energy Resources (part of the Ministry of Petroleum Natural Resources). Omega has undertaken wind mapping in our area of 56 sq km in Gharo. Its wind data analysis covered 6 sites over 3 years. All the data gathered was provided to AEDB on gratis basis.

ZPL has a signed EPC Contract from M/s. Sinovel. Sinovel has been growing by leaps and bounds. In 2008 it installed wind power capacity of 1,403 MW and ranked No.1 in China and No.7 in the world. In 2009 Sinovel installed 3,510 MW, ranking No.1 in China and No.3 in the world. In 2010, Sinovel installed 4,386 MW, ranking No.1 in China and No.2 in the world.

With its corporate culture centering on "Challenge, Innovate, and Transcend", Sinovel has adopted technological innovation, localization, large-scale production, international expansion and integration of service as its long-term development strategies.

Sinovel is the first in China to successfully finish the R & D and production of the 6 MW wind turbine in China with independent intellectual property right.

The O&M contract during the two-year warranty period has been signed by Sinovel.

The original production estimates for the wind farm was carried out by our wind consultants- Global Energy Concepts of Seattle USA.

We sent GEC all wind data available with us i.e. 1995-1997, Met mast Gharo projects for three years and our 50 meter mast for two years. We also sent 20 years climate data of Karachi Airport and climate data of Manora of over 60 years.

Recently the production estimate for the Zephyr Power project was carried out by our EPC Contractor – Sinovel.

Month	Monthly Benchmark Wind Speeds (meter/sec)					
	30 m height	50 m height	60 m height	67 m height	80 m height	85 m height
January	4.7	5.1	5.2	5.3	5.4	5.5
February	5.1	5.4	5.5	5.6	5.7	5.8
March	5.3	5.7	5.8	5.9	5.9	6
April	7	7.3	7.4	7.6	7.6	7.7
May	8.9	9.4	9.6	9.7	9.8	9.9
June	10.3	10.9	11.1	11.2	11.3	11.4
July	8.4	8.9	9	9.2	9.2	9.3
August	9.3	9.8	10	10.2	10.3	10.4
September	7.6	8.1	8.2	8.3	8.4	8.5
October	4.3	4.6	4.7	4.7	4.8	4.9
November	3.8	4.1	4.2	4.3	4.4	4.5
December	4.6	4.9	5.1	5.2	5.3	5.4
Annual Average	**6.6**	**7**	**7.1**	**7.2**	**7.3**	**7.4**

Monthly Benchmark Wind Speeds for Gharo

AEDB provided us with monthly and annual wind speeds relevant to our site. We understand AEDB has based the bench mark figures on Gharo Met Mast location.

In accordance with the requirements of the NEPRA Act and Rules and Regulations made there under, ZPL hereby submits this petition, in accordance with the NEPRA Tariff Standards and Procedures Rules 1998 for tariff determination for its facility located at Gharo, District Thatta.

1.4 Compliance with Tariff Standards and Procedures

This petition is being filed under Rule 6 of NEPRA Generation Licensing Rules, 2000. Tariffs have been prepared on the basis of the Guidelines presented in the Ministry of Water and Power / AEDB's "Guidelines for Determination of Tariff for Wind Power Generation 2006".

2 FACTS AND GROUNDS OF PETITION

2.1 Rationale for Wind Power

Thermal Energy has become very expensive and almost beyond the reach of developing nations.

High oil prices and the dramatic rise to well over $ 140 and fall of the price of oil underlines the necessity to rollout a strategic plan aimed at curtailing dependence on imported fuel. The price of hydrocarbon fuels is linked to political events and in the long run remains unpredictable and unstable.

Pakistan has increased its reliance on the electricity generated through thermal sources (fuel oil and natural gas) over the years. This, coupled with fluctuating oil prices, has adversely affected Pakistan's oil import bill. This is not only an economic threat as any shortfall in fuel supply but can further deteriorate power crisis presently prevalent in Pakistan.

The solution is to generate energy through renewable sources such as water, wind, and sunlight. Renewable sources of energy are currently unevenly and insufficiently exploited in Pakistan. Although all resources are abundantly available, and the real economic potential considerable, renewable sources of energy make a disappointingly small contribution to the Country's overall gross energy consumption.

Hydropower is economical but hydropower projects take a very long period to develop. Large hydro power projects not only require huge outlays but also are not environment friendly and are being discouraged worldwide. Most of the hydro resources are located in the areas where access is very difficult and distance to grid is very long. Therefore despite strong efforts from the government, it is difficult to attract private investors to take-up these projects.

Photovoltaic (or more popularly solar) energy is at its initial stages of evolution and is very expansive at this stage. Its performance is also limited which makes it unfeasible for commercial purposes. It can only be used in special off grid requirements.

The only recourse in the short term is wind power generation. Although it is new technology in Pakistan, it has been around for long enough internationally to become commercially viable.

The Government of Pakistan has initiated an aggressive program to encourage the induction of renewable energy as a mainstream source for power generation. The Alternate Energy Development Board has identified significant sources of renewable energy in geographic areas which have a sustainable potential for high

year round electricity generation. As an initial thrust, the Keti Bunder – Gharo corridor near Karachi has been identified as a very viable location for Wind Farms supplying the Utility Companies. National Energy Security Action Plan has set a target of 1.3% of total generation from renewable sources by 2015. This translates into a target generation of total 1,680 MW of which a major portion will be Wind Powered electricity generation.

The development of wind generation projects supports the environmental objectives of the Government of Pakistan by reducing dependence on fuels for thermal power generation, increasing diversity in Pakistan's electricity generation mix, and reducing greenhouse gas (GHG) emissions through the avoidance of thermal power generation and help reduce the exorbitant deficit of foreign exchange.

2.2 Project Brief

Initial wind studies conducted by the Government of Pakistan (GOP) through Pakistan Metrological Department (MET Office) and Alternative Energy Development Board (AEDB) have shown very encouraging results. Based on these studies GOP has offered private investors the opportunity to develop Independent Power Producer (IPP) companies for generating electricity from wind in the coastal regions of the Sindh province.

ZEPHYR POWER (PVT.) LIMITED (ZPL) is a locally incorporated company which is currently in the process of setting up a 50 MW Wind Power Farm. The electricity generated will be sold to the Central Power Purchasing Agent (CPPA) namely the National Transmission and Distribution Company (NTDC).

The project will be located at Gharo (Bhambore) region as identified by AEDB. The Government of Sindh through AEDB has allocated Land for the project.

The project is being setup based on SL82 1.5 MW wind turbine generators to be installed at a hub height of 80 meters as per the Sinovel General Specification. Sinovel are the second largest wind turbine manufacturers of the world.

The Tariff Petition is based on KIBOR interest rate plus 3%. We have also calculated on LIBOR interest rate plus 4.75% where the levelized tariff comes to 14.33 cents/ kwh. The Tariff Calculation Sheets based on both KIBOR and LIBOR are enclosed

2.3 Project Summary

Project	Zephyr Power Pvt. Limited
Capacity	49.5 MW
Turbine Supplier	Sinovel (China)
Wind Turbine Specification	SL 82 1.5 MW
Total Wind turbines	33
EPC Contractor	Sinovel

O&M Contractor	Sinovel
Estimated Generation	141.46 GWh
Project Costs	USD 139.591 million
Levelized Tariff	19.07 cents/kwh
IRR	18%
O&M Costs (Years 1-2)	USD 2.617 million /year
O&M Costs (Years 3-10)	USD 5.014 million /year
O&M Costs (Years 11-20)	USD 6.026 million /year
Debt / Equity (%)	75 / 25
Financing	Rupees
Loan term	10 years
Grace Period	18 Months
Repayment Schedule	Quarterly
Interest Rate	KIBOR + 3% for Rupees

2.4 Production Estimate

This section presents the preliminary Production Estimates for the ZPL's wind farm. The production estimate has been calculated using data from the Gharo mast. This mast has a height of 50-metres and is placed near the project site.

The production estimate has been calculated based on one turbine type; The Sinovel SL82, hub height 80 meters, rotor diameter 82 meters, rated power of 1500 kW, High Temperature (HT).

Power curves corrected to an air density of 1.179 kg/m^3 have been used in the production calculations. The production estimates include array losses due to shadowing effects (wake effects) from one turbine to another within the wind farm.

Based on the available information, the following main results have been derived:

Wind turbines	SL82 -1.5MW
Hub height (m)	80
No. of turbines	33
Total installed capacity (MW)	49.5
Estimated Gross Annual Park Production (GWh/year)	182.408
Net deliverable production (GWh/year)	141.763
Net Capacity factor	32.7%

Detail working and description of the production estimate is available in Feasibility Study which is submitted to AEDB. The technical details of the Sinvovel SL82 are enclosed in annexure.

2.5 Setup and Operations

Unlike thermal generation technologies, most costs of wind generation are fixed. These include upfront capital costs and ongoing cost of debt and O&M costs. Unlike thermal energy, there is no fuel component in the energy cost for wind energy. Wind power generation, per unit output cost is determined by these costs, together with plant capacity and plant lifetime. The levelized tariff cost is expected to be 19.07 cents/kWh over the 20 year life of the assets.

2.6 Carbon Credits

The Project will be able to benefit from receiving carbon credits under the Clean Development Mechanism (CDM), one of the three mechanisms established by the Kyoto Protocol to meet an objective of stabilizing greenhouse gas concentrations in the atmosphere.

The Kyoto Protocol was drawn up under the auspices of the United Nations in the late 1990s with an objective to slow, and eventually halt, the effects of human actions on the climate. It requires developed nations to cut their emissions of CO_2 and other greenhouse gases by an average 5% against 1990 levels. After years of wrangling, the protocol came into effect in February 2005

Countries that have commitments under the Kyoto Protocol may undertake investments that reduce emissions in developing countries, and in return receive Certified Emission Reductions (CERs) that can be used to offset their commitments under the Protocol. Alternately, countries such as Pakistan that do not have emission reduction commitments under the Protocol may seek a buyer for emission reductions from a domestic project.

Pakistan is eligible to participate in the CDM, having ratified the Kyoto Protocol and established a Designated National CDM Authority. The company will process carbon credits of the Policy for Development of Renewable Energy for Power Generation 2006, which has been established by the Government of Pakistan.

While it appears possible that the Project may be able to realize monetary gains from such carbon credits schemes, the actual timing, amount and other details of the outcome are quite uncertain at this point and may remain uncertain until after the plant becomes operational. It is thus proposed that the tariff for the Project be approved independent of the outcome of the Carbon credits and any incremental income from carbon credits will 100% be allocated to ZPL.

3. DETERMINATION SOUGHT

3.1 Summary of Determination Sought

This Petition seeks a determination from NEPRA with respect to the following items:

- The Reference Tariff to remain effective for the period of 20 years from the Date of Commercial Operation.
- The approval of the proposed tariff indexations

3.2 Reference Tariff

The proposed Reference Tariff includes three components:

- The non-debt fixed cost component.
- The debt service cost component
- The variable operating and maintenance (O&M) cost component.

The Reference Tariff is equivalent to a levelized tariff over the proposed 20-year tariff control period of 19.07 cents/kWh, or Rs 16.47/kWh. This does not include Carbon Credits which may be paid separately as per Policy of Government of Pakistan. The Project's financial projections on the basis of the proposed tariffs. The specified tariff, along with the indexation, would set the maximum limits of rates at which Zephyr Power can sell power to NTDC.

The proposed Reference Tariff comprising the non-Escalable cost component and the Escalable cost component is presented in the Table below:

	PKR	US Cents
Average Tariff	13.58	15.72
Levelized Tariff	16.47	19.07

4. TARIFF STRUCTURE

4.1 Introduction

The tariff has been structured to cater for the project costs covering:

- Development costs
- EPC costs
- Financing costs
- Debt service costs
- O&M costs (Foreign and Local)
- Administration and Management costs

- ROE
- Insurance
- Other Project Costs

Additionally, in order to properly match the actual expected expenditure of the Project, the proposed tariff would need to include the appropriate escalable components and actual cost structures of the Project, so that the tariff is properly adjusted to account for any change in the Project's revenue requirements (with regards to inflation, foreign exchange, interest rates etc.)

The present working is based on Rs 86.356 = US$ 1.00 and US$ 1.43 = Euro 1.00

The proposed tariff consists of appropriate Escalable components and the actual cost structures of the Project. The escalable portion takes care of the local and foreign inflation, and rupee/dollar and dollar/euro parity. Broadly the tariff may be divided into:

- **Non-Escalable Energy Component**
- **Escalable Energy Component**

4.2 Non Escalable Energy Component

4.2.1 Debt Finance Service

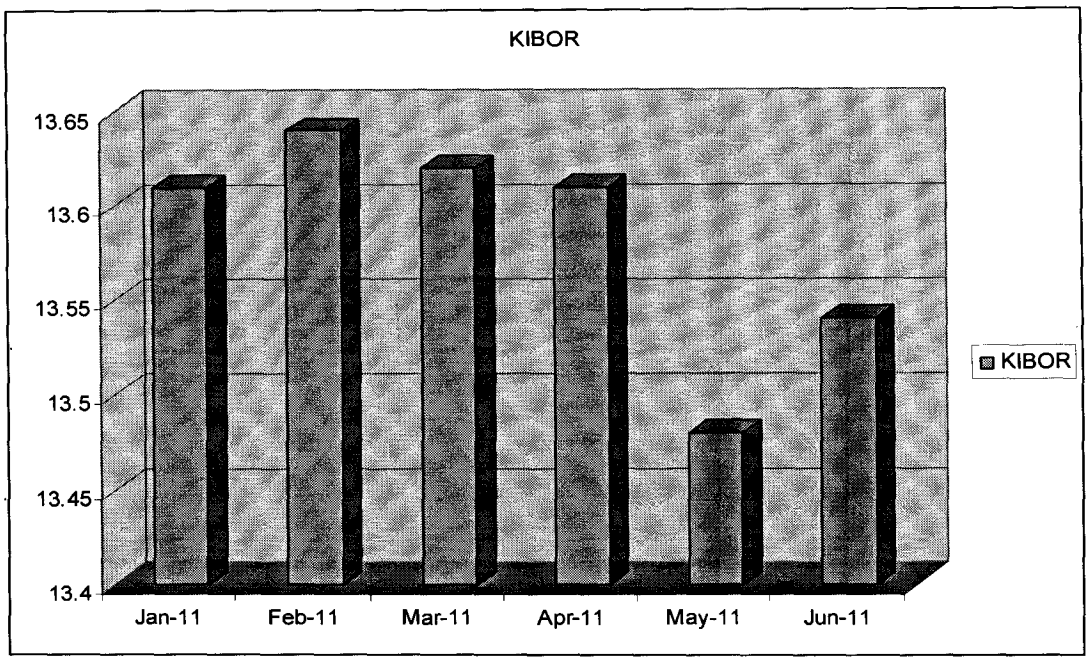
The entire debt to be arranged from the Pakistani banks in Pak Rupees. The term of the loan discussed with the banks at this time is 10 year plus the 18 months Grace period based on 6-month KIBOR plus a spread of 3.0%. This fixed rate will not vary over the time period of the financing. The Project Company expects 6 month KIBOR to be available for the debt. KIBOR is to be adjusted on a semi annual basis i.e. 6 months KIBOR.

The Project Company has accessed local debt for financing the Project at 6-Month KIBOR plus 3.00% spread. KIBOR trend for last 6 months during shown in the Graph and Table below:

Month-wise 6 month KIBOR rate during 2011

Months	6- month KIBOR %
Jan-11	13.61
Feb-11	13.64
Mar-11	13.62
Apr-11	13.61
May-11	13.48
Jun-11	13.54

6 – Month KIBOR



Terms of Debt

Description	Value in US$
Effective Date (KIBOR & US$)	20th August, 2011
Exchange Rate	1 US$ = PKR 86.35647
Financing Plan	Debt 75% ; Equity 25%
Total Project Value	139,591,184
Debt (75%)	104,693,388
KIBOR 6-months	13.36%
Spread	300 basis points
Debt Mark up	KIBOR + 3.0%
Loan Tenure	10 years
Grace period	18 months
Schedule of repayment	Quarterly
Return On Equity (ROE)	18%

The Lead Arranger's indicative Term Sheet is attached as Annexure.

6-Month KIBOR has been assumed for the reason that the revenues of a Wind IPP's are dependent on monthly energy produced. Such monthly energy produced 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 severely hampers due to this variation in revenue generation capabilities of the project. The Petitioner has opted for the 6-month KIBOR, as this would allow the Petitioner to equalize the monthly cash flows of the Project, for meeting all the cost requirements of the Project.

The debt service cost component covers both non-escalable items (i) repayment of the principal amount and (ii) payment of interest charges. The project's debts is planned to be financed in local currency (PKR) with door to door tenor of up to 10 years including grace period up to 18 months which is based on maximum estimated time required for the project to achieve Commercial Operation status. Therefore, the debt service cost is structured to reflect the debt service obligations in the first 10 years of the Project's operation. For remaining 10 years of the Tariff Control Period, the debt service cost component would be zero.

The debt service component (including interest charge portion) will be indexed with LIBOR for the foreign exchange rate of Rs. 86.35647/US$ on 20th August 2011, due to the US dollar payments for the EPC and O & M Contracts of financing and KIBOR for local trenches of financing.

Additionally, one-time adjustment in the Project Costs will also be required at the time of a the financial closing of the Project, which will result in an update to the debt service cost and return on equity components as of the closing date. Such concessions are already provided by NEPRA in Tariff of other power projects.

Details of the planned debt financing are agreed between ZPL and Lead Arranger and attached herewith.

The nature of this Project, and the need for international expertise and technology (with an EPC contract denominated in foreign currency with a Chinese company), calls for the participation of an experienced international company. The debt financing for the Project is envisaged to be fully funded with local debts.

4.3 Escalable Energy Component

The non-debt, escalable component covers the following items:
a) Local O&M Costs
b) Foreign O&M Costs; and
c) Return on Equity

4.3.1 Local O&M Costs

This represents the fixed costs of all the staff for O&M including the employees' pay and allowances, administrative costs including rent, utilities and local taxes. It also includes costs such as NEPRA annual fees and bank's commissions, audit fees, legal and consultancy fees, environmental monitoring and reporting fees etc. this component is therefore subject to local CPI indexation/adjustment.

4.3.2 Foreign O&M Costs

Preventive and scheduled maintenance of all plant/equipment is required as per manufacturer's recommendations. This is to ensure that the Plant remains available for reliable dispatch and for completing its contracted life. This component also includes the cost of spare parts and time change items as well as Management Fee of the O&M Operator. This component would therefore be subject both to US$ zone CPI as well as US$ / PKR adjustment/indexation.

Insurance Cost is also included in foreign O&M cost. It consists of all risk insurance/reinsurance for the Project, as well as business-interruption insurance, which is the lender's stipulated requirement.

As per practice in Pakistan, such large projects are reinsured with foreign specialist companies. The local industry normally retains only about 5% of the risk while 95% is reinsured abroad. Lender also requires coverage of machinery breakdown, natural calamities (like earthquake), and sabotage and business interruption. Since the plant/equipment cost is the major cost of the project and also totally in foreign currency, it is imperative that all aspects of the risk are covered adequately and no compromise is made in this respect. This cost would also therefore be subject both to US$ zone CPI inflation as well as to US$/PKR adjustment/indexation.

4.3.3 Return on Equity:

The Return on Equity (ROE) component includes return on invested equity giving an IRR of 18% net of withholding tax on the basis of maximum dividends payouts possible to the shareholders during each particular year and for the whole of the 20 year period. We request that ROE during construction period may be added on to the tariff at the time of COD.

To attract FDI in the project as equity, NEPRA allows CPI on ROE besides fixing the PKR/USD exchange rate at Financial Close. We have seen the depreciation of USD compared to other currencies. The final portion of equity investment in (i) local currency (PKR) and (ii) foreign currency (USD) will be submitted at Financial Close. A minimum of fifty percent equity will be in USD. It is therefore requested that the following indexations be allowed:

Return on Foreign Equity	PKR/USD Exchange Rate and US CPI
Return on Local Equity	CPI

5. PROJECT COSTS

5.1 Breakdown of the Total Project Cost

Following reflects a breakdown of the total Project cost of USD 139.591 million.

PROJECT COST	Million USD
EPC costs	111.436
Project Development Costs	4.945
Financial Charges	3.429
Other Project Cost	4.950
Insurance During Construction	1.997
Interest During Construction	12.277
Duties and Taxes	0.5572
Total Project Cost	139.591

As this project is new of its kind in Pakistan, no local wind generation cost information is available for comparison and wind generation costs are not directly comparable with any other type of generation in use in Pakistan. However, per MW project cost of the project may be considered as within the limit NEPRA allowed for other Wind Power Projects.

5.2 EPC Costs

Following reflects a breakdown of the EPC cost of USD 111.436 million.

EPC COST	Million USD
Off Shore Cost	93.913
On shore Cost	16.163
L/C Charges	1.36
Total EPC Costs	**111.436**

Off Shore Cost, On Shore Cost and L/C Charges cover all EPC costs. These include, EPBOP equipments, Installation and Erection, Civil Construction, Design and management, Geo tech studies etc. EPC Contractor is responsible for the management and coordination of the all site activities like a standard EPC contract.

Turbine Supply Costs: ZPL have entered into an EPC Contract with Sinovel based 33 Sinovel SL 82 1.5 MW Wind Turbines. The payments in respect of the EPC Contract will denominated in USD, therefore onetime adjustment on the Project Costs at Commercial Operation Date is required to reflect the changes in Euro/USD and USD/PKR exchange rates.

5.3 Selection of Equipment

The technology selected for the Project has been selected after detailed analysis of various power generation technologies available internationally for the purposes of power generation through wind. A range of technologies were reviewed by ZPL for wind power generation, which included, inter alia, below one MW to multi Megawatt WTGs. Various factors were considered in selection of equipment and technology.

ZPL sought proposals from wind generation equipment manufacturers based on the following defined criteria:

1) Wind conditions: Compliance of proposed wind turbine with wind conditions
2) Prices for delivery, transport, erection and commissioning of WTGs including terms of payment; specific cost; relation between final investment costs and operation cost to the estimated energy field
3) Competitive cost of equipment
4) Commitment to the market: Willingness to commit to Pakistan's market with regard to setup or support in setting up a local service organization
5) Delivery time: Lead time and conditions to be fulfilled in order to have the agreed delivery time started
6) Energy output: Warranted power curve, performance warranty
7) Grid compatibility: WTG must comply with the latest grid condition requirements
8) Documentation: Completeness of technical documentation for the proposed turbine model or time schedule for the completion
9) Track record of the manufacturer
    - Turbine: Number of installation of the proposed types of WTG, location and year of installation, availability figures giving evidence of the turbine's maturity
    - Company: Position in the market, financial strength, growth in relation to market, service quality
10) O&M: Suitability of O&M concept for the size and location of projects, availability of spare parts, consumables and main components

Based on the above and after conducting extensive evaluation of various manufacturers, ZPL selected Sinovel wind turbines for the purpose of this project. All wind turbine equipments, accessories and spare parts will be manufactured in China at Sinovel manufacturing facilities.

5.4 Project Cost (Other than EPC Costs):

PROJECT COST (Other than EPC Cost)	Million USD
Project Development Costs	4.945
Financial Charges	3.429
Other Project Cost	4.950
Insurance During Construction	1.997
Interest During Construction	12.277
Duties and Taxes	0.5572
Total Cost	**28.155**

5.5 Project Development Cost

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 mainly include the following:

(a) Government Permits and Licenses Fees;

(b) Feasibility Study Costs;

(c) Cost of Travel;

(d) Consultant's Fees;

(e) Costs related to the guarantees which have been furnished or to be furnished to AEDB;

(f) Cost incurred or to be incurred for Project Company Incorporation and Capitalization;

(g) Human Resources Cost

Cost Head	Value in USD
Government Permits and Licenses fees	
Registration Fees to AEDB	100
Generation Licenses Fee to NEPRA	16,950
Tariff Application Fee to NEPRA	5,070
Lawyer's Fee to AEDB	50,000
Feasibility Verification Fee to AEDB	10,000
Electrical Studies Fee to NTDC	2,300
NOC Fee to EPA Sindh including Consultant Fee	3,375
Sub Total	**87,795**
Charges for Bank Guarantees:	
Bank Guarantee Charges for Issuance of LOI	4,858
Performance Guarantee Charges for Issuance of LOS	1,250
Seller's L/C to NTDC Charges under EPA	34,650

Sub Total	**40,758**
Company Incorporation and Capitalization Fee to SECP	80,750
Project Consulting and advisory Fee since LOI issuance until COD	580,000
Feasibility Study	950,000
Construction Consultants Supervision Fees	900,000
Sub Total	**2,510,750**
Travel and Related Cost	
Domestic Travel	15,500
International Travel	150,000
Sub Total	
HR Cost:	1,500,000
Administrative during construction	640,000
Total Project Development Cost	**4,944,803**

5.5.1 Government Permits and Licenses Fee

This includes various fees to AEDB, NEPRA, NTDC and Environment Protection Agency (EPA) of Government of Sindh.

5.5.2 Charges for Bank Guarantees

This is composed of bank guarantee charges for obtaining LOI from AEBD, Performance guarantee charges for issuance of LOS and Seller's L/C to NTDC charges under EPA.

5.5.3 Project Company Incorporation and Capitalization Fee to SECP

The fees relating to Project Company incorporation and capitalization incurred on registration of authorized capital of the Project Company with the Securities and Exchange Commission of Pakistan (SECP) are included in this cost head.

5.5.4 Project Consulting and Advisory Fees

The technical, financial and legal consultants and advisors cost shall be incurred by the Project Company during the Project development phase.

5.5.5 Construction Consultants Supervision Fees

The Construction Supervision Engineer and contract Engineer for EPC Cost shall be incurred by the Project Company during the Pre-COD period.

5.5.6 Feasibility Study

The heads of costs include wind measuring mast, technical feasibility, electrical and grid inter-connection studies and geo-technical and topographical studies.

5.5.7 Travel and Related Cost

The Project Company shall incur traveling costs of both domestic and international routes, as the Executives and other staff working for the Project are foreigners and need to go back to their hometowns in accordance with approved framework of staff benefits (leaves, air tickets, allowances etc.)

5.5.8 HR Cost

The HR Costs include salaries, wages & benefits of all staff as follows;

- Management Executives
- Technical and Operations department
- Commercial & Legal Affairs department
- Finance department
- Training and Human Resource Department
- Supply & Logistic Department

These staff members shall be employed by the Project Company at the site and in Karachi Office.

5.6 Financial Charges

Financial charges include the costs related to the debt financing of the Project. Such costs include the Lead Arranger's up-front fee, facility management fee and commitment fee. The upfront fee and facility management fee are obtained by the Lead Arranger at once at the beginning. The commitment fee shall be applied every year on the un-drawn amount of the debts. Looking at the planned schedules, it is expected that the commitment fee shall not prolong. The financial charges do not include the L/C charges applied on the contract with SINOVEL.

The financial charges have been negotiated with Lead Arrangers and are in the form of properly signed indicative Term Sheet and are in line with the prevailing market conditions and NEPRA's previously approved determinations.

Table: Financial Charges

Description	Value in US$
Total Project Value	139,591,184
Total Debt Value	104,693,388
Upfront Fee @ 2.2% of total debt (one time applicable)	2,303,255
Facility Management fee @ 1% of total debt (one time applicable)	1,046,934
Commitment fee @ 0.5% of undrawn debt value (yearly applicable)	78,520
Total Financial Charges	**3,428,708**

The commitment fee is charged by the Lead Arranger on the un-drawn balance of the debt facility allowed to the borrower

5.6.1 Grace Period

75% of the Project is financed by the Lead Arrangers. The debt is provided with a Grace Period of 18 months and a repayment period of ten (10) years. The RE Policy, 2006 allows 2 years Grace Period and 10 years repayment period, which total of 12 years. The Project Company has followed a shorter Grace Period which has resulted in lowering the interest during Construction (IDC) to PKR 1.06 million. The Project Company has not opted to exercise the leverage of utilizing the maximum ceiling of Grace Period of 24 months allowed under the RE Policy, 2006.

By following a stringent Grace Period, the Project Company has made a conscious effort to reduce the Project costs by the margins and the resultant tariff is also curtailed so that the consumers of electricity in Pakistan get a lower tariff.

5.7 Other Project Cost

Breakdown of Other Project Cost

Cost Head	Value in USD (million)
Fixed	2.20
Administration Cost	1.45
Security Arrangement Cost	0.75
Communication Link Cost	0.55
Total Other Project Cost	**4.95**

5.7.1 Fixed Assets

This includes cost of various instruments, equipment and other assets and comprises of:

a) Vehicles, Office Equipment, Furniture, Electrical Appliances; and

b) Three sets of wind measurement masts (instruments, Lattice towers, calibration, security, maintenance and insurance) as required under the Energy Purchase Agreement (EPA)

5.7.2 Administration Cost

This portion of the Other Project Cost includes costs associated with rents, utilities, vehicles fuel and maintenance and other allied expenses of running the office during the development and Construction Period.

The Project Company's office is based in Karachi. This office is required to maintain coordination with the Project Company's Lenders, shareholders and various governmental agencies and shall work during the whole process of making the Feasibility study, determination of tariff, and other Project development activities.

5.7.3 Security Arrangement Cost

Pakistan is going through a tough time with respect to security situation in country. This is one of the major obstacles in attracting foreign investments. The Project Company is also concerned about the security of its personnel. Therefore, security arrangement costs become one of the important components of the Project cost. This represents the costs associated with providing security at offices, accommodation and site; and also including for expatriates engaged for the

Project. It is highlighted that in view of the present security situation in Pakistan, the provision of security by the Project Company is considered critical.

5.7.4 Communication Link Cost

In accordance with the requirements of the EPA, the Project Company is required to provide connectivity to the Power Purchaser. The total deployment cost (including equipment materials, and installation) has been included under this head, this communication link is essential as the Project Company is bound to transmit wind speed and power output data to the Power Purchaser for record of data in line with EPA requirements.

5.8 Insurance During Construction

Insurance during Construction cost covers the insurance cost of project company's assets during construction as well as the cost incurred prior to COD. These cost estimators have been developed based on offer received from one of the leading international insurance company AON Insurance. The insurance company has experts readily available to provide insurance premium estimates for the wind power Projects.

The Project Company, in view of the practices set by the 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, Erection All Risk insurance (CEAR) / Third Party liability

(b) Marine Cargo – Delay – In Startup Insurances

(c) Terrorism insurance

(d) Workmen's Compensation insurance

(e) Group Personal accident

(f) Motor Comprehensive Insurance

The insurance Cost also covers administrative surcharge, Federal Excise Duty and Federal insurance fee, in each case relating to Insurance during Construction.

The total value of Insurance during Construction US$ 1.997 million.

5.9 Interest During Construction (IDC)

IDC shall be applied for 18 months i.e. the Grace Period indicated in the Term Sheet.

The Interest during Construction is as follows:

Description	Value in US$
Total Debt	111,489,888
KIBOR (20th August, 2011)	13.36%
Spread	300 basis points
Interest rate (KIBOR)	16.36%
Grace Period	18 months
Total Interest During Construction	**12,276,648**

Actual IDC shall be subject to change depending on the fluctuation in base rate (6 month KIBOR) and changes in Project cost including changes due to taxes and duties.

IDC shall be calculated for the period starting from first drawdown of loans after Financial Close based on accrued interest for the outstanding debt on semi annual basis. The Grace Period shall start from the date the banks release first payment of loans.

Therefore the IDC is estimated figure which is adjustable at COD based on actual timing and amount of loans drawdown during the Project Construction Period after the Financial Close.

5.10 Duties & Taxes

(a) Customs Duty

The source rules regarding customs duty are driven under the RE Policy 2006 (the Policy), Guidelines for Determination of Tariff for Wind Power Generation 2006 (the Guidelines) and the Government of Pakistan, Federal Board of Revenue Statutory Regulatory Order (SRO) No. 575(i)/2006 dated June 05,2006.

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

Fiscal Incentive / Exemptions on Re Based Power Projects

The Policy	The guidelines	SRO
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, 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	**Annex – I (Fiscal Regime)** Customs duty at the rate of 5% on the import of plant and equipment not manufactured locally	**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 Pakistan Machinery, equipment and spares meant 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 from above that three documents (the Policy, the Guidelines and the SRO) when read in Conjunction gives rise to an ambiguous situation, as the Policy provides for NIL customs duty, the guidelines provides for a 5% customs duty, and whereas the SRO has both the NIL and 5% customs duty rate.

The Petitioner has assumed 0% customs duty regarding imported plant, equipment, machinery etc in accordance with Para 13 of the SRO read with the Policy. However, as the Guidelines and Para 11 of the SRO provide a 5% customs duty rate, in view of this apparent ambiguity the Petitioner prays NEPRA to allow adjustment of capital cost of the Project and the tariff, in each case, for actual customs duty paid, at COD.

(b) Special Excise Duty

Special Excise Duty is assumed at 0% as the same is correlated with the rate of customs duty (assumed 0%). In case the Project has to pay 5% customs duty (in the event the customs authorities bring the import under Para 11 of the SRO) then the Special Excise Duty at 1% is leviable. Accordingly, the Petitioner prays NEPRA to allow adjustment of capital cost of the Project and the tariff, in each case, for actual customs duty paid, at COD.

(c) Sales Tax

No Sales Tax is assumed on import and local supply of the imported plant, equipment, and machinery etc, baed upon the SRO and recent Notification SRO 369 (1)/2011 dated May 07, 2011 issued by the Government of Pakistan, Federal Board of Revenue

(d) Income Tax

No income tax is assumed at import stage in view of the SRO 947(1)/2008 dated September 05, 2008 and SRO 263(1)/2011 dated March 19,2011.

(e) Sindh Infrastructure Development Surcharge (SIDS)

0.50% of the imports for the Project have been assumed as SIDS. The chargeability of Sindh Infrastructure Development Surcharge (the 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 Project Cost.

However, 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.

6.0 RETURN ON EQUITY (ROE)

Risk perceptions are high in investing in Pakistan energy sector not only because of the security situation of the country but also considering the issue of the circular debt. This is an egg and chicken situation as foreign investment is required not only to boost the sector but also to bring credibility back to the energy sector of Pakistan. Another risk perception is that there is no history of wind projects in Pakistan. Considering the above the Project Company has proposed 18% ROE (IRR based), net of 7.5% withholding tax on dividends, to attract Investment in this sector.

Moreover, in the past NEPRA has allowed thermal / conventional power producers an IRR of 15% and 18% to hydel projects-; it is noteworthy that the data for

hydrology in Pakistan is much more detailed and reliable (for having been collected for several decades than the data for wind. However, since the Project is based on energy production through wind (renewable resources), a sector in its infancy in Pakistan the Project Company is proposing and return on invested equality of 18% (IRR), net of 7.5% withholding tax on dividends.

The Tariff Standards prescribed under Rule 17 of the Tariff rules require that the return on investment should be "commensurate with other investments of comparable risk". It is submitted that NEPRA has allowed 18% ROE in hyder project where the hydrology risk and unforeseen soil condition are both well mitigated under the Power Purchase agreement and NEPRA tariff guidelines which permit a "3 stage" tariff process permitting a reopening of the tariff parameters. As explained below, the GOP is only covering the wind speed while the investor is taking the risk of other wind characteristics. Accordingly, the wind sector investment is of a higher risk than the hydel or thermal investment, necessitating a higher risk premium.

The discussion below highlights the salient arguments in favor of allowing 18% ROE to the Petitioner.

6.1 Medium Term Policy for Development of Alternative and Renewable Energy

AEDB has already taken notice of the aforementioned situation and has therefore proposed to the government of Pakistan, under the draft of the Medium Term Policy for Development of Alternative and Renewable Energy, to increase the return to the sponsors to 18%.

Section 1.13.9.2 of the draft Medium Term Policy for Development of Alternative and renewable Energy states:

"the economic, social and environmental benefits of ARE, it is the policy of the Government of Pakistan to provide a rate of return in excess above that of conventional power during the lifetime of this medium term policy subject to a quota which rate shall be use in tariff calculations. The ARE Rate of Return on Equity (ROE) for ARE Projects will be a minimum of 18%."

(the term 'ARE' means 'Alternative and Renewable Energy').

6.2 Wind Risk

The RE Policy 2006 provided by the Government of Pakistan does not offer complete immunity to the equity investor against wind risk. The coverage is limited to variations in wind speed only and it does not take into account other factors which can affect the energy output of a wind speed only and it does not take into account other factors which can affect the energy output of a wind farm. These factors include, air density, wind frequency distribution, temperature, and

humidity. This limitation in the wind risk coverage can have a detrimental impact on the IRR of the equity investor.

6.3 Security Problems

Over the last three years the security situation in Pakistan has been quite unpredictable. The security threats in the country have had an adverse impact both on the economy and on the cost of doing business in Pakistan. Most of the thermal IPPs being constructed under the Power Generation Policy 2002 have had to face the repercussions of the deteriorating security situation in one way or the other. The increased risk on the capital employed, coupled with the economic uncertainties (circular debt), justify an increase in the required rate of return to 18% IRR.

6.4 Monthly Energy Production Vs Annual Energy Production

The mechanism for tariff determination and revenue generation for Wind IPP's is based on the Wind Tariff Guidelines 2006 and the same is also reflected in article 9 (compensation, payment and Billing) of the EPA. This mechanism assumes monthly wind energy production of the wind farm equipment (monthly payments are made for energy produced each month up to the monthly benchmark energy while bonus energy (over and above monthly benchmark energy) is only compensated to the extent of 10%)

On the other hand, no wind turbines supplier or EPC contractor in the wind industry is willing to offer guarantee for monthly energy production from their equipment as the global industrial practice is to offer guaranteed power curve on annual basis for wind turbine. This mismatch (i.e. between the basis of tariff determination / revenue generation and the respective guarantees offered by the WTG supplier / EPC Contractor faced by the Project can have a significant effect on the returns to the sponsors and needs to be compensated by increasing the allowed rate of return, as designed by the Project Company under and this Tariff Petition.

6.5 Higher ROE for Coal based Projects

Project Company appreciates the fact that government is encouraging indigenous resource based projects. Recent example Is the notification No PI-6 (71)/2010 from Ministry of Water and Power on March 8th 2011; where 20.5 percent ($ based)(IRR is guaranteed for indigenous coal based project achieving financial close by June 2014.

Project Company feels that similar kind of encouragement may be given to wind IPPs by giving higher ROE, so that reliance on the indigenous based resources can be increased. In the last determination NEPRA allowed 17 percent IRR based return to a wind project. Project Company believes that it is justified to request NEPRA based on the above to determine 18 percent IRR based return.

6.6 Return on Equity during Construction (ROE DC)

NEPRA allows IRR based ROE. Therefore, the return on Equity during Construction (ROE DC) has been accrued and shall be determined as actual at the time of COD according to the actual disbursement of equity drawdown. The return due towards the Project Company during construction (the ROE DC) has not been estimated separately in this petition and shall form part of Reference Tariff true-up calculations at COD on the basis of actual equity draw down.

Since the Project shall commence prior to Financial Close through equity participation, this would result I applying ROE DC for 18 months. However, the IDC shall apply only for 18 months.

The usual practice by IPPs is to identify the loan Grace Period and Project Construction Period in the tariff petition and sought approval for both IDC and ROE DC according to actual drawdown and disbursements. The common practice is that loan Grace Period and Project construction Period are the same i.e. 18 to 24 months because the construction begins after Financial Close.

For the Construction Period is 18 months and bank is willing to give 18 months Grace Period but the Project Company has opted for 18 months Grace Period in the Term Sheet based on the above mentioned methodology.

The Petitioner understands that as per the practice, ROE DC is not allowed before Financial Close. If NEPRA allows Roe DC before Financial Close, the Project COD shall come earlier and the tariff shall be lower because of lower IDC.

The Project Company has, therefore, opted for the case which shall ultimately become beneficial in reference Tariff at COD. It is very important to refer that higher tariffs were approved for Rental Power Plants (RPPs) on the grounds to quickly bring power in the national grid.

7.0 OPERATION AND MAINTENANCE COST

O&M expenses are one the major unknowns for the wind developers in Pakistan. Up till now not even single wind project COD has been achieved in Pakistan. The sponsors of this Project have a lot of experience involving with the wind project in one way or the other in China. At present, china is the fastest growing country with respect to wind and is currently at the top in the world in terms of installed capacity of wind. It is important to note the O&M costs are not as low in wind projects 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 driven up operations and maintenance costs. This is even more critical in Pakistan where the temperature in the windy months is also very high and machines have to work in almost full capacity in extreme weathers. Yet these maintenance costs are lesser as compared to overhauling and fuel costs of thermal generators.

O&M costs for the Project is US cent 2.76 per year over the 20 years life of the Project. These O&M Costs of the project are in line with sponsors experience in China. Another important thing to note that there is no allied infrastructure available in Pakistan and it is anticipated that for the first 300 to 500 MWs, the O&M costs can be even more than the available benchmarks of China.

WTG supplier of the Project Sinovel is providing the O&M services for the first 10 years of operations under separate O&M contract out of which first two years are also covered under manufacturer's warranty.

In the last 05 years large wind turbines are being developed with reduced cut-in speed to increase the power production and to drive down the cost of electricity. This trend in wind turbine size escalation also comes with increased uncertainty regarding O&M activities. This fact of increasing O&M costs for wind turbines is also supported by finding recently released by the European Wind Energy Association (EWEA) in its report, The Economics of Wind Energy.

The Project life cycle is of 20 years and a lot of risks related to security are also to be looked.

The project Company is bringing all the expertise from China to address the technical issues during Operations of the Projects.

In view of the above, the O&M costs suggested by the Project Company in the Petition are well within the range of international benchmarks and experience in China. This is the humble request of the petitioner that the O&M cost presented below may be allowed to run the project efficiently for sustainable development of wind industry in Pakistan.

The O&M cost includes the following:

Cost Head	Year 01-02	Year 03-05	Year 06-10	Year 11-20
Foreign O&M				
Foreign O&M	-	2,120,000	2,460,000	3,320,000
Sub Total	-	2,120,000	2,460,000	3,320,000
Local O&M				
Fixed Assets local purchased	20,000	20,000	20,000	20,000
Payroll and Allied expenses for local staff	575,000	600,000	664,000	664,000
Security arrangement cost	97,000	97,000	97,000	97,000
Vehicle fuel and maintenance	138,000	138,000	138,000	138,000
Administrative cost	468,000	468,000	468,000	468,000
Sub Total	1,298,000	1,323,000	1,387,000	1,387,000
Total	**1,298,000**	**3,443,000**	**3,847,000**	**4,707,000**

7.1 Technical Support and Service of Outsource

In first 10 years of the Operation Period, Sinovel is obligated to carry out the O&M service.
However, in the years 11-20 the Project Company has to carry out the O&M itself and it certainly requires the technical support from the WTGs manufacturer and other equipment manufacturer, as well as a Technical Consultant from outsource may also be required.

7.2 Fixed Assets

This includes cost of vehicles, office equipments, furniture, electrical appliances and tools required at site for inspection of WTG equipment.

7.3 Payroll and Allied Expenses

The payroll costs include salaries, wages & benefits of all staff as follows

- Management Executives

- Technical and Operations department
- Wind Farm O & M Team
- Commercial & Legal Affairs department
- Finance department
- Training and Human Resource Department
- Supply & Logistic Department

These staff members shall be employed by the Project Company at the Project site and in Karachi Office.

7.4 Security Arrangement Cost

Due to the volatile law & order situation in Pakistan and in the region overall, security arrangements are a very important and vital subject. The project has thus deputed a full time security team at its site office, Karachi office as well as for its accommodation in Karachi to ensure that the Project Company is able to attract the best talents in the field of renewable energy to Pakistan and address their valid security concerns. The foreign staff of manufacturers and investors who visit the Project for work shall also be provided security cover during their stay in Pakistan

7.5 Vehicle fuel and maintenance

This component includes the costs associated with the running and maintenance of vehicles at the Site offices of the Project Company. This includes the vehicles required by the security personnel for securing the site; vehicles required for supervision and coordination of O&M activities, vehicles for administration needs.

The vehicles purchased during the Construction Period shall be used for first 10 years of the O&M period. At the start of the 11^{th} year, the old vehicles shall retire off and replacement vehicles shall be procured by the Project Company in each year as the depreciated and worn off vehicles are laid off and same level of fuel and maintenance costs shall be maintained for the remainder of the Project Terms.

7.6 Administration

This portion of the O&M Cost includes costs associated with rents, utilities traveling, entertainment, audit, legal and financial consultants, technical consultation, generation license fees, and other allied expenses of running the office during the Operation Period of 20 Years.

The administration cost also includes the cost of operating the "Site Clinic", which shall act as a dispensary to provide preliminary medical and first aid services.

8.0 INSURNACE DURING O&M

The insurance Cost consists of the insurances required under the implementation Agreement and those customarily required for project financing transactions, including all-risk insurance / reinsurance, business interruption insurance, and machinery break-down, natural calamities, sabotage and terrorism. As these risks are an impediment to the smooth and efficient running of the day-to-day affairs of the Project, it is critical that all the risks associated with the Project are adequately addressed and all the insurable events are catered for in a fool proof manner. Keeping in view the generally adopted global trends and the magnitude of the Project, a comprehensive operational insurance and reinsurance arrangement is a fundamental task to the bank ability of the Project.

The operational phase of the Project Company has been insured by the one of the leading brokers in the insurance world, AON.

Moreover, Lenders financing the Project will require insurance of the Project's assets on replacement cost basis, which will be inevitably in foreign currency as the EPC Contracts are also denominated in US Dollars. It is expected that any replacement costs consequent to the insurable event will also be incurred in US Dollars:

The Project company, in view of the practices set by the other IPP's in Pakistan and in accordance with the requirements set out by the lenders, proposes to the procure the following insurance during the operational phase of the Project:

(a) Operating Phase including Business Interruption
(b) Third Party Liability
(c) Terrorism Insurance
(d) Group Personal Accident Insurance
(e) Motor Comprehensive Insurance

The insurance cost shall be charged by the Project Company at actual and will be recoverable as the insurance cost component. The insurance Cost also covers administrative surcharge, Federal Excise Duty and Federal Insurance Fee, in each case relating to Operational Phase insurance.

The total cost of Insurance during O&M is USD 1.318 million.

9. 0 PROPOSED REFERENCE GENERATION TARIFF

9.1 Tariff Control Period

As the Project is 75% debt funded with loan tenure of 10 years for repayment, this means that 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 the lower debt service related costs.

The proposed tariff is for the life of the Project i.e. length of the EPA, which is 20 years from the COD. The tariff is divided into four (04) bands i.e. year 1-2, Year 3-5, year 6-10 and year 11-20 to cover the variations due to debt repayment period, warranty support during O&M and O&M outsourced contracting.

The 20 year tariff control period is in line with the design life of the wind turbines, as they are designed to have a very low probability of failure with 20 years. Although, the wind turbines may have an even longer life span but factors such as turbine quality, local climatic conditions impact on the expected life the assets.

9.2 Proposed Reference Generation Tariff

The Reference Generation Tariff for the Project over the 20 years concession term is given below. The reference Generation Tariff Table has been made on the Net Annual Energy Output of 141.76 GWh.

Table: Tariff Table

Year	O&M	Return on Equity	Loan Repayment	Interest Charges	Total Tariff	
	Rs / kWh	Rs / kWh	Rs / kWh	Rs / kWh	Rs / kWh	Cents / kWh
1	2.27196	2.70302	1.97344	7.25301	14.20143	0.23281
2	2.27196	2.70302	2.05415	7.17229	14.20143	0.23281
3	2.27196	2.70302	2.13817	7.08828	14.20143	0.23281
4	2.27196	2.70302	2.22562	7.00083	14.20143	0.23281
5	2.27196	2.70302	2.31665	6.90980	14.20143	0.23281
6	2.27196	2.70302	2.41140	6.81505	14.20143	0.23281
7	2.27196	2.70302	2.51002	6.71642	14.20143	0.23281
8	2.27196	2.70302	2.61268	6.61376	14.20143	0.23281
9	2.27196	2.70302	2.71954	6.50690	14.20143	0.23281
10	2.27196	2.70302	2.83077	6.39567	14.20143	0.23281
11	2.27196	2.70302	-	-	4.97498	0.08156
12	2.27196	2.70302	-	-	4.97498	0.08156
13	2.27196	2.70302	-	-	4.97498	0.08156
14	2.27196	2.70302	-	-	4.97498	0.08156
15	2.27196	2.70302	-	-	4.97498	0.08156
16	2.27196	2.70302	-	-	4.97498	0.08156
17	2.27196	2.70302	-	-	4.97498	0.08156
18	2.27196	2.70302	-	-	4.97498	0.08156
19	2.27196	2.70302	-	-	4.97498	0.08156
20	2.27196	2.70302	-	-	4.97498	0.08156
NPV	**19.3425**	**23.0123**	**14.1695**	**42.5230**	**99.0473**	**1.6237**
Levelized Tariff	**2.2720**	**2.7030**	**1.6643**	**4.9947**	**11.6341**	**0.1907**
Average			**1.1896**			

Tariff	**2.2720**	**2.7030**		**3.4236**	**9.5882**	**0.1572**

10. INDEXATIONS, ESCALATIONS AND COST ADJUSTMENT

10.1 Indexation

The purpose of indexation is to remove any exposure of an investor to cost escalations, over the life of the Project, over which they have, no direct control. With that principle in mind, the following sections discuss the proposed indexation for various components of the tariff.

Indexation formulae have been prepared taking into account the guidelines presented in the Ministry of Water and Power / Alternate Energy Development Board's, "Guidelines for Determination of Tariff for Wind Power Generation 2006", NEPRA's recent determinations and the provisions of the standard drafts of the implementation Agreement and the Energy Purchase Agreement.

10.2 Foreign Exchange

A foreign exchange indexation should be applied to those cost elements that are dominated in foreign currency (US $). For these items, the investor will have no control over cost changes rate fluctuations, and these should therefore be passed through to purchaser. The proposed tariff structure implies that the following components should be indexed to variations in foreign exchange rate (Rs./US$):

a) Portions of the O&M Components that are dominated in foreign currency;
b) The debt-servicing component. The Project debt is intended to be funded in foreign currency;
c) The insurance component as discussed previously will provide cover on a replacement cost basis, which will be incurred in dollars. Premium will therefore be constructed on that basis, and insurance cost will therefore fluctuate with exchange rate movements;
d) The ROE (IRR based) component that reflects the equity investment in foreign currency (US$)

Indexation for these components should be applied quarterly, on january1, April 1, July 1 and October 1 on the basis of the TT & OD selling rate as notified by the KASB Bank Ltd. (in Rs/ US$). In the event of discontinuation of the TT&OD selling rate by the KASB Bank or introduction of another regime by the State Bank of Pakistan for determination of the exchange rate, NEPRA will be asked to substitute the mechanism with another mechanism which does not place the Petitioner in a worse position.

10.3 KIBOR

The wind farm investors will have no direct control over changes in interest rates. Appropriate indexation should therefore be applied so that interest charge portion of the debt-servicing component of the tariff reflects changes in the Karachi Inter Bank Offered Rate (KIBOR). This portion should thus be adjusted quarterly for variations in the 6-month KIBOR as published by the State Bank of Pakistan.

10.4 Local Inflation

With currency exchange rates and interest, the wind investor will not be able to influence local inflation, thus appropriate indexation should therefore be applied to reflect portion of the tariff that is subject to local inflation. For the proposed tariff structure, the portion of O&M component that are denominated in local currency (PKR) should be indexed to local CPI.

Indexation for these components should be applied on quarterly basis, on the basis of CPI as notified by the Federal Bureau of Statistics (FBS).

10.5 Foreign Inflation

The equity investment and O&M Foreign component are denominated in US Dollars. As with currency exchange rate interest rates a wind farm investor will not be able to influence US inflation. Appropriate indexation should therefore be applied to reflect the portion of the tariff. It is thus proposed that theses costs should be adjusted for US inflation per United States Consumer Price Index (USCPI) as published monthly by the department of Labor, United States Government.

A Summary of indexations requested is given below;

Summary of Indexations

Cost Component	**Inflation Adjustment**	**Foreign Exchange Rate Adjustment**
Operation & maintenance – Local	Local WPI	
Operation & maintenance – Foreign	US CPI	$ / Rs.
Insurance during O&M – foreign	-	$ / Rs.
Return on Equity – Foreign	US CPI	$ / Rs.
Debt Service – Foreign	KIBOR	$ / Rs.
Project Cost – One time Adjustment	Actual at COD $ / Rs	
IDC	Actual at COD	
ROE (IRR Based)	Actual Equity Injection Schedule at COD	

10.6 Cost Adjustment at COD

It is prayed that NEPRA allows the Project Company to adjust the Project cost at COD, which shall in turn affect the other relevant tariff components. The

reference Tariff Table shall be revised at COD, while taking into account the said adjustments. The adjustments are requested for the following;

(a) US$ / PKR exchange rate variations during the Construction Period;
(b) All such Project cost heads, which are subject to be adjusted, as per actual;
(c) Interest during Construction (IDC) for increase in Project Cost, change in interest base rate (KIBOR) and variation in actual debt drawdown;
(d) Return on Equity during Construction (ROE DC; IRR based) on actual equity drawdown;
(e) All local duties and taxes
(f) All financial charges by the Lenders of the Project.

11. CONSIDERATIONS WITH RESPECT TO EPA

11.1 Monthly Energy Payments

As per the policy, the wind risk is guaranteed by the Government of Pakistan and the tariff is based on the monthly benchmark energy table based on the monthly benchmark wind speeds. Therefore, monthly payments shall be made for the benchmark energy produced by the Project.

Further, the bonus payments are also applied on any energy produced over and above the benchmark energy. The standard EPA approved by the GOP provides for payment of bonus energy on monthly basis. There is no differentiation in the RE Policy between the timing for payments for monthly benchmark energy and bonus payments. NTDC has in recent negotiations shifted the bonus payments towards the end of the year on the argument that "NEPRA's determination was silent on this issue". It is most unfair for a Project to be penalized for the shortfall energy (shortfall from the monthly benchmark energy) on a monthly basis, but not allowing the quid pro quo of the 10% bonus payment also on monthly basis. The petitioner therefore prays that NEPRA state explicitly in the tariff determination that bonus energy payments should also be made on monthly basis. If this is not agreed, then any shortfall energy payments should also be referred for payment at the end of year. It is proposed to allow payments of bonus energy on a monthly basis in the same manner as the payment of benchmark energy is made are made by the Power Purchaser under the EPA. For each month, the benchmark energy and the bonus energy (if produced) shall be determined and paid by the purchaser.

11.2 Incorporation of Indexation, Escalations and Cost Adjustment in reference Tariff

It is understood by the Project Company that the reference Tariff is approved along with certain indexations, escalations and cost adjustments as explained and desired in the section 11 of this petition.

Therefore, for the approval purposes, NEPRA shall determine the Reference Tariff and shall side by side approve / allow the indexation, escalations and cost adjustments. At any given time, the payable tariff shall be after incorporation of

indexations, escalations and cost adjustments in the Reference Tariff as applicable at that time.

12. 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.

I. Debt: Equity ratio is assumed to be 75:25.
II. 100% of Debt has been assumed to be financed through banks and financial institutions.
III. Interest rate for debt is assumed in local currency at 6-Month KIBOR plus 3.0% Spread), to be indexed semi-annually.
IV. A constant ROE of 18% (IRR based) is assumed (net of 7.5% withholding tax on dividends) over 20 years. The ROE DC shall be accrued at time of COD according to the actual schedule of equity disbursement.
V. Exchange Rate (PKR /USD) is taken @ PKR 86.35647 per USD. at 20th August, 2011.
VI. All Taxes (Federal, Provincial, Local or district), stamp duties and levies etc which are not factored in the tariff calculation shall be treated as pass through items, in term, in term of EPA.
VII. 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 "pass through" to the Power Purchaser.
VIII. No withholding tax has been considered in the Off-Shore Contract with Sinovel. Any additional tax, if levied, will be "pass through" to the Power Purchaser.
IX. 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"
X. Usually, the Zakat deduction on dividends (Currently @ 2.5%), as required to be deducted under Zakat Ordinance, is considered as "pass through". However, being a foreign investor, the deduction of Zakat will be exempted in this Project.
XI. Sindh Infrastructure Development Surcharge @0.50% of the imports for the Project has been assumed.
XII. The return on Equity or 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
XIII. 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.
XIV. Main Energy meter and electronic recorder for continuous recording of readings will be provided by NTCD at its own cost.
XV. Financing Terms are as yet based on the initial discussion with the financial institutions 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 terms, benchmark index (KIBOR) and the spread margin of the financial institution.

XVI. Insurance during Construction costs are considered based on the proposal received. Premium rate for the insurance arrangements will be finalized at the time of financial closure.

XVII. No hedging cost is assumed for exchange rate fluctuation during construction and all cost overruns resulting from variations in the exchange rate during construction shall be included in the Project Cost.

XVIII. 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.

XIX. The payments to Workers Welfare Fund and Workers Profits Participation fund have not been accounted for in the Project budget and have been assumed to be reimbursed at actual by the Power Purchaser.

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

XXI. The power purchaser be directed to purchase and pay all bonus energy (as defined in be Policy 2006)on a monthly basis; and

XXII. Term financing could subsequently be raised in USD or in Yuan. If our efforts are successful then the financial costs would come down substantially. We request NEPRA to note that at the appropriate time we would ask for a revision in tariff rates. We request NEPRA to note that to cover political risk in Pakistan the Chinese bankers need to take out an insurance cover from Sinosure. The cost of this insurance may be reflected in the revision of the tariff at the appropriate time.