National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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Registrar

No.NEPRA/R/TRF-111/DPPL-2008/1357-59
December 6, 2008

Subject: **Determination of the Authority in the Matter of Tariff Petition filed by Dawood Power (Pvt.) Ltd. (DPPL) [Case # NEPRA/TRF-111/DPPL-2008(3)]**
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 the subject Determination of the Authority along with Annexure-I, II & A (47 pages) in Case No. NEPRA/TRF-111/DPPL-2008(3).

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 17 of the Determination relating to the reference tariff, adjustments & indexation along with Annexure-I & II needs to be notified in the official gazette. The Order is reproduced for the purpose of clarity and is attached herewith.

Enclosure: As above

(Hussnain Zaigham)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
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The Secretary
Cabinet Division
Government of Pakistan
Cabinet Secretariat
Islamabad

CC:
1. Secretary, Ministry of Water & Power, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.

ORDER OF THE AUTHORITY
IN CASE NO. NEPRA/TRF-111/DDPL-2008(3)
TO BE NOTIFIED IN THE OFFICIAL GAZETTE

Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, Dawood Power (Pvt) Limited (hereinafter the "DPPL") is allowed to charge the following specified/approved tariff for delivery of electricity to CPPA of NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:

Tariff Components	Year 1-5 RS/kWh	Year 6-10 Rs/kWh	Year 11-20 Rs/kWh	Indexation
Fixed Charges				
Fixed O&M Local	0.3944	0.3944	0.3944	WPI
Fixed O&M Foreign	0.2977	0.4428	0.4428	PKR/US$, US CPI
Insurance	0.4884	0.4884	0.4884	PKR/US$
Debt Service	8.0604	8.0604	-	LIBOR/KIBOR
Return on Equity	2.1635	2.1635	2.1635	PKR/US$
Variable Charge				
Variable O&M (Local)	0.0129	0.0129	0.0129	WPI
Variable O&M (Foreign)	0.0456	0.0681	0.0681	PKR/US$, US CPI
Total	11.4629	11.6305	2.6494	

i) The reference tariff has been calculated on the basis of 32.70% Plant Capacity Factor.

ii) The above charges will be limited to the extent of annual generation of 141.800 GWh. Any annual generation in excess of 141.800 GWh would be charged at 10% of the above sale rate.

iii) In the above tariff no adjustment for CERs has been accounted for. However, upon actual realization of CERs, the same shall be distributed between the power purchaser and DPPL in accordance with the approved mechanism as given in the GoP Policy for Development of Renewable Energy 2006.

iv) The reference Euro/Dollar parity has been assumed at 1.2631. The Rupee/Dollar exchange rate has been assumed as 79.79.

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

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

vii) Debt Servicing Schedule is attached as Annex-II

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The following indexations shall be applicable to the reference tariff:

I. One Time Adjustment

(i) Cost of Debt

a. The Principal repayment and the cost of debt shall be adjusted at Financial Closing as per actual borrowing composition i.e foreign and/or local.

b. Interest During Construction (IDC) shall be adjusted at COD according to the actual disbursement of loan and the prevailing LIBOR/KIBOR rates..

c. After COD, Interest part of the tariff component shall be adjusted on quarterly basis for variation in LIBOR (issued by British Bankers Association (BBA)) and KIBOR (issued by Karachi Inter Bank Offer Rate) for the foreign and local financing respectively.

DPPL shall submit the relevant documents to NEPRA within seven (7) days of COD for adjustment of relevant tariff components.

ii) Adjustment in project cost due to variation in Euro/Dollar parity

Any variation in the cost of energy equipment during the project construction period on account of variation in Euro/Dollar rate parity over the reference Euro/Dollar rate parity of 1.2631 shall be allowed through adjustment in the project cost. The energy equipment cost of Euro 63.650 million is inclusive of energy equipment transportation cost. For the purpose of this adjustment, petitioner shall provide evidence of actual payment along with the exchange rate prevalent on the date of particular transaction. DPPL's reference tariff table shall be revised at COD to incorporate all the permissible adjustments during the project construction period.

II. Pass-Through Items

No provision for income tax has been accounted for in the tariff. If DPPL is obligated to pay any tax, the exact amount paid by the company may be reimbursed by CPPA to DPPL on production of original receipts. This payment may be considered as pass-through payment (as Rs./kWh) spread over a 12 months period in addition to fixed charges proposed in the Reference Tariff. Furthermore, in such a scenario, DPPL may also submit to CPPA details of any tax shield savings and CPPA will deduct the amount of these savings from its payment to DPPL on account of taxation.

Withholding tax is also a pass through item just like other taxes as indicated in the government guidelines for determination of tariff for new IPPs. Withholding tax shall be paid @ 7.5% of the reference equity. CPPA (NTDC) shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 15% equity according to the following formula:

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Withholding Tax Payable = [{15% * ($E_{(Ref)} - E_{(Red)}$} x 7.5%]

Where:

$E_{(Ref)}$ = Reference Equity (US$ 24.0670 million x 79.79)

$E_{(Red)}$ = Equity Redeemed

In case the Company 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 Company is able to recover the same as a pass through from the Power Purchaser in future on the basis of the total dividend pay out.

III. Indexations:

The following indexations shall be applicable to the reference tariff;

i) Indexation applicable to O&M

The local part of the fixed O&M cost will be adjusted on account of inflation (WPI) and foreign fixed O&M cost will be adjusted on account of variation in dollar/rupee exchange rate and US Consumer Price Index (CPI). Quarterly Adjustment for local inflation, foreign inflation and exchange rate variation will be made on 1st July, 1st October, 1st January & 1st April respectively on the basis of average of the latest available information with respect to Wholesale Price Index (WPI) (notified by the Federal Bureau of Statistics), 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 in accordance with the standard practice adopted by the power purchaser. The mode of indexation will be as follows:

(a) Fixed O&M

i) $F\ O\&M_{(LRev)} = 0.3944 * WPI_{(REV)} / 145.01$

ii) $F\ O\&M_{(FRev)} = 0.2977 * US\ CPI_{(REV)} / 216.573 * ER_{(REV)} / 79.79$

Where:

$F\ O\&M_{(LRev)}$ = the revised applicable fixed O&M local component of the fixed charges indexed with WPI

$F\ O\&M_{(FRev)}$ = the revised applicable fixed O&M foreign component of the fixed charges indexed with US CPI and currency fluctuation

$WPI_{(REF)}$ =145.01- WPI (manufactures) for the month of October 2008 notified by the Federal Bureau of Statistics

$WPI_{(REV)}$ = the revised Wholesale Price Index (manufactures)

$US\ CPI_{(REF)}$ = 216.573- US CPI notified by US Bureau of Labor Statistics (All urban consumers) for the month of October 2008.

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$US\ CPI_{(REV)}$ = Revised US Consumer Price Index as notified by the US Bureau of Labor Statistics (All Urban Consumers)

$ER_{(REV)}$ = the revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

Note: Fixed O&M foreign component of Rs. 0.4428/kWh for the period of 6-20 years shall also be adjusted according to the above formula.

(b) Variable O&M

The formula for indexation of variable O & M local and foreign component will be as under:

$V\ O\&M_{(LREV)} = 0.0129 * WPI_{(REV)}/145.01$

$V\ O\&M_{(FREV)} = 0.0456 * US\ CPI_{(REV)}/216.573 * ER_{(REV)}/79.79$

Where:

$VO\&M_{(LREV)}$ = The revised applicable variable O&M local component indexed with WPI.

$VO\&M_{(FREV)}$ = The revised applicable variable O&M foreign component indexed with US CPI and currency fluctuation.

$WPI_{(REF)}$ = WPI (Manufactures) for the month of October 2008 notified by the Federal Bureau of Statistics.

$WPI_{(REV)}$ = The revised WPI as notified by the Federal Bureau of Statistics

$US\ CPI_{(REF)}$ = 216.573 US CPI for the month of October 2008 notified by the US Bureau of Labor Statics (All Urban Consumers)

$US\ CPI_{(REV)}$ = Revised US Consumer Price Index as notified by the US Bureau of Labor Statistics (All Urban Consumers)

$ER_{(REV)}$ = The Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

c) Adjustment in Insurance Component

Insurance component of reference tariff shall be adjusted as per actual subject to maximum of 1.35% of Plant & Equipment Cost on yearly basis upon production of authentic documentary evidence by DPPL according to the following formula:

Insurance (Revised) = $0.4884 * ER_{(REV)}/79.79$

Where;

$ER_{(REV)}$ = The Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

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d) Adjustment for LIBOR/KIBOR variation

The interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to variations in interest rate as a result of variation in quarterly LIBOR or KIBOR, as the case may be, with premium over LIBOR/KIBOR remaining the same i.e 3%, according to the following formula:

$$\Delta I = P_{(REV)} * (LIBOR_{(REV)} - 5.4\%) / 4$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in three month LIBOR. Δ I can be positive or negative depending upon whether $LIBOR_{(Rev)}$ > or < 5.4%. The interest payment obligation will be enhanced or reduced to the extent of Δ I for each quarter under adjustment applicable on quarterly basis.

$P_{(REV)}$ = the outstanding principal (as indicated in the attached debt service schedule to this order at Annex-II) on a quarterly basis on the relevant quarterly calculations date. Period 1 shall commence on the date on which the 1st installment is due after availing the grace period.

Adjustment on account of local inflation, US CPI indexation, foreign exchange variation and LIBOR/KIBOR variation will be approved and announced by the Authority within seven working days after receipt of DPPL's request for adjustment 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 or other equivalent standards. All plant and equipment shall be new.

Power Curve of Wind Farm

The power curve of the Wind Farm shall be verified by the power purchaser, as part of the Commissioning tests according to the latest IEC standards and shall be used to measure the performance of the wind turbines.

Wind Power Plant's Performance Data

DPPL 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 for record of data.

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Delivery Point

As per Article 11 of the Generation License, DPPL shall deliver power at 132 kV at the door step of its wind farm. Up-gradation of generation voltage up to 132 kV will be the responsibility of DPPL.

Emissions Trading/ Carbon Credits

DPPL would process and obtain emissions/carbon credits expeditiously and credit the proceeds to the Power Purchaser as per the policy issued by the Federal Government and agreed terms between the generator and the purchaser.

The above tariff and terms and conditions will be incorporated as the specified tariff approved by the Authority pursuant to Rule 6 of the Licensing (Generation) Rules, in a Power Purchase Agreement between DPPL and CPPA. The tariff and terms and conditions along with reference tariff table and debt service schedule as attached thereto are recommended for notification by the Federal Government in the official gazette in accordance with the Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

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Annex-I

DAWOOD POWER (PVT) LIMITED
REFERENCE TARIFF

Year	Variable O&M Local	Variable O&M Foreign	Fixed O&M Local	Fixed O&M Foreign	Insurance	Return on Equity	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Tariff *
	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh
1	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	3.6223	4.4381	11.6252
2	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	3.9363	4.1241	11.6252
3	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	4.2775	3.7829	11.6252
4	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	4.6483	3.4121	11.6252
5	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	5.0512	3.0092	11.6252
6	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	5.4890	2.5713	11.7929
7	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	5.9649	2.0955	11.7929
8	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	6.4819	1.5785	11.7929
9	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	7.0438	1.0166	11.7929
10	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	7.6544	0.4060	11.7929
11	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
12	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
13	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
14	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
15	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
16	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
17	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
18	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
19	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
20	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
Levelized Tariff	**0.0129**	**0.0581**	**0.3944**	**0.3782**	**0.4884**	**2.1635**	**0.1623**	**3.6639**	**2.1536**	**9.4754**

Levelized Tariff (1-20 years) discounted at 10% per annum = US Cents 11.8754/kWh at reference exchange rate of 1US$=Rupees 79.79.

* ***The above rate is limited to an annual energy production up to 141.800 GWh. Any generated energy beyond 141.800 GWh in a year will be charged at 10% of the Reference Tariff for that year.***

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Annex-II

DAWOOD POWER (PVT) LIMITED
Debt Servicing Schedule

Period	Foreign Debt					Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh	Annual Debt Servicing Rs./kWh
	Principal Million $	Repayment Million $	Mark-Up Million $	Balance Million $	Debt Service Millin $			
	96.27	1.56	2.02	94.71	3.5812			
	94.71	1.59	1.99	93.12	3.5812			
	93.12	1.63	1.96	91.49	3.5812			
	91.49	1.66	1.92	89.83	3.5812			
1	96.27	6.44	7.89	89.83	14.3246	3.6223	4.4381	8.0604
	89.83	1.69	1.89	88.14	3.5812			
	88.14	1.73	1.85	86.41	3.5812			
	86.41	1.77	1.81	84.64	3.5812			
	84.64	1.80	1.78	82.84	3.5812			
2	89.83	7.00	7.33	82.84	14.3246	3.9363	4.1241	8.0604
	82.84	1.84	1.74	80.99	3.5812			
	80.99	1.88	1.70	79.11	3.5812			
	79.11	1.92	1.66	77.19	3.5812			
	77.19	1.96	1.62	75.23	3.5812			
3	82.84	7.60	6.72	75.23	14.3246	4.2775	3.7829	8.0604
	75.23	2.00	1.58	73.23	3.5812			
	73.23	2.04	1.54	71.19	3.5812			
	71.19	2.09	1.49	69.10	3.5812			
	69.10	2.13	1.45	66.97	3.5812			
4	75.23	8.26	6.06	66.97	14.3246	4.6483	3.4121	8.0604
	66.97	2.17	1.41	64.80	3.5812			
	64.80	2.22	1.36	62.58	3.5812			
	62.58	2.27	1.31	60.31	3.5812			
	60.31	2.31	1.27	58.00	3.5812			
5	66.97	8.98	5.35	58.00	14.3246	5.0512	3.0092	8.0604
	58.00	2.36	1.22	55.63	3.5812			
	55.63	2.41	1.17	53.22	3.5812			
	53.22	2.46	1.12	50.76	3.5812			
	50.76	2.52	1.07	48.24	3.5812			
6	58.00	9.75	4.57	48.24	14.3246	5.4890	2.5713	8.0604
	48.24	2.57	1.01	45.67	3.5812			
	45.67	2.62	0.96	43.05	3.5812			
	43.05	2.68	0.90	40.37	3.5812			
	40.37	2.73	0.85	37.64	3.5812			
7	48.24	10.60	3.72	37.64	14.3246	5.9649	2.0955	8.0604
	37.64	2.79	0.79	34.85	3.5812			
	34.85	2.85	0.73	32.00	3.5812			
	32.00	2.91	0.67	29.09	3.5812			
	29.09	2.97	0.61	26.12	3.5812			
8	37.64	11.52	2.81	26.12	14.3246	6.4819	1.5785	8.0604
	26.12	3.03	0.55	23.09	3.5812			
	23.09	3.10	0.48	19.99	3.5812			
	19.99	3.16	0.42	16.83	3.5812			
	16.83	3.23	0.35	13.60	3.5812			
9	26.12	12.52	1.81	13.60	14.3246	7.0438	1.0166	8.0604
	13.60	3.30	0.29	10.31	3.5812			
	10.31	3.36	0.22	6.94	3.5812			
	6.94	3.44	0.15	3.51	3.5812			
	3.51	3.51	0.07	(0.00)	3.5812			
10	13.60	13.60	0.72	(0.00)	14.3246	7.6544	0.4060	8.0604

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(NEPRA)
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Case No. NEPRA/TRF-111/DPPL-2008(3)

DETERMINATION

OF

TARIFF PETITION

Filed by

DAWOOD POWER (PVT.) LTD. (DPPL)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (NEPRA)

***

Case No. NEPRA/TRF-111/DPPL-2008(3)

Petitioner

Dawood Power (Pvt.) Ltd. (DPPL)

Authority

Zafar Ali Khan
Member

5/12/08

Ghiasuddin Ahmed
Member

5/12

Maqbool Ahmad Khawaja
Vice Chairman/Member

Khalid Saeed
Chairman

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Determination of the Authority in the matter of Tariff Petition filed by Dawood Power (Pvt) Limited- Case No. NEPRA/TRF-111/DPPL-2008(3)

Dawood Power (Pvt) Limited (hereinafter the"DPPL") formerly Win Power (Pvt) Ltd filed a revised Tariff Petition on July 16, 2008 for determination of generation tariff in respect of its 49.5 MW (Gross ISO) Wind Power Generation Plant located at Gharo- Sindh. The tariff petition was admitted by the Authority for consideration on July 25, 2008. The main contents of the tariff petition were published in the major national daily newspapers on July 31, 2008 for invitation to all the stakeholders, interested /affected persons or parties to participate in the tariff setting process either by offering their comments or becoming a party to the case as interveners. NEPRA did not receive any intervention request to this case. However, comments on the tariff petition were received from the Power Purchaser (CPPA), Hyderabad Electric Supply Company (HESCO) and Irrigation & Power Department (Government of Sindh). The comments offered by the commentators as well as Petitioner's response to the issues raised by the commentators has been included wherever necessary, while discussing project specific issues in the following pages. The public hearing of the case was held on August 21, 2008 at the main office of NEPRA at Islamabad.

Background

2. The current tariff petition by DPPL is its third application with NEPRA, whereby it has requested the Authority for approval of generation tariff in respect of its 49.5 MW wind power project. Its first application was submitted for acceptance of upfront tariff of US cents 9.5/kWh which was allowed by the Authority on November 29, 2006. Subsequently, it submitted tariff petition for determination of generation tariff, which was determined by the Authority on April 27, 2007, according to which it was allowed a levelized tariff of Rs 6.5743/kWh (US Cents 10.7776/kWh). In response to this determination of the Authority, DPPL submitted a motion for leave for review which was admitted by the Authority and based on documentary evidence provided in support of the EPC cost of the project, its tariff was revised to Rs. 6.6641/kWh (US cents 10.9248/kWh). The Authority decision on its review motion was issued on July 10, 2007.

Current Tariff Petition-Submission of the Petitioner.

3. DPPL has stated that while the tariff approved by NEPRA on July 10, 2007 was being considered by DPPL for acceptance, the wind power equipment availability in the international market became scarce and NORDEX of Germany, based on whose quotation the tariff was obtained, was no longer interested in the Pakistan market. It has been stated that all possible efforts were made to get the equipment from NORDEX, but due to the political and law and order situation in the country, NORDEX pulled out and did not honour its commitment.

4. DPPL has stated that, in consultation with its technical partner (AXOR), it obtained quotations from other internationally reputed manufacturers and after due diligence and consultation with its lenders (Standard Chartered Bank of UK) in March 2008, decided to procure

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wind turbines from Goldwind Science and Technology Company of China. In view of the increased cost of equipment, due to inflation, higher fuel prices in the international market and demand supply position of the energy equipment, it is constrained to file a revised tariff petition.

5. DPPL has, therefore, requested for a revised levelized tariff of Rs. 8.9598/kWh (US cents 14.6881/kWh). The comparison of project cost and other parameters, already approved by the Authority in its last determination for DPPL and its current submissions, is given hereunder;

Components	Last Determination Mln USD	Current Petition Mln USD	Inc/(Dec) Mln USD
WTG Equipment	69.800	85.552	15.752
Sub station & Electrical works	11.749	13.921	2.172
Civil works	11.876	14.262	2.386
Insurance, supervision, Engineering etc	5.025	6.198	1.172
Total EPC Cost	**98.450**	**119.933**	**21.483**
Project development and management	3.172	3.739	0.567
Fees and other non EPC costs	1.210	1.210	0
Financial Charges	1.576	4.656	3.080
Interest During Construction (IDC)	3.476	3.602	1.126
Total Project Cost	**107.884**	**133.140**	**25.256**
Cost per kW (USD)	2132	2690	558
Net Annual Production GWh	**141.089**	**131.662**	**(9.427)**
Net Plant Capacity Factor	31.86%	30.36%	(1.5%)
Levelized Tariff US Cents/kWh	10.9248	14.6881	3.7633
Rs./kWh	6.6641	8.9598	2.2957

Note; Above cost estimates and the levelized tariff has been worked out at an exchange rate of US$=Rupee 61.0 and Euro/US$ parity=1.3441.

6. The Petitioner has, therefore, requested for approval of the following:

i) Grant of Tariff (Rs. 8.9598/kWh, levelized), to remain effective for a period of 20 years from the date of Commercial Operation; and

ii) Approval of proposed indexation in the tariff as set out in para 5.3 of the petition.

A copy of Tariff Petition filed by DPPL is attached as Annex-A.

7. Based on the information gathered during the proceedings of the case, the comments of the stakeholders as well as information submitted/provided by the Petitioner, the following issues have been considered for determination by the Authority.

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ISSUES

(A) Net Annual production
(B) Wind Speed Risk
(C) Project Cost
(D) Debt Service
(E) Return on Equity (ROE)
(F) O&M Cost
(G) Insurance

(A) Net Annual Production

8. DPPL has stated that it has changed its equipment supplier from NORDEX (Germany) to Goldwind (China). The main reason for change of equipment supplier, as stated by the Petitioner, was NORDEX's not fulfilling its commitment for supply of energy equipment due to the current situation of security and law and order in the country. The petitioner has stated that it had no option but to look for other equipment suppliers and after consultation with its Joint venture partner AXOR and Standard Chartered Bank (its lenders) it decided to obtain quotations from other internationally reputed manufacturers in the US, Canada, India and China. After due diligence the company board gave its go ahead for procuring wind turbines from Goldwind Science and Technology Company of China. DPPL has provided a copy of the Memorandum of Understanding (MOU) signed with Goldwind on March 7, 2008 for supply of GW 77 1.5 MW wind turbines with deliveries promised in August 2009.

8.1 DPPL has estimated 131.662 GWh as net annual energy production, which is at an average annual plant capacity factor of 30.36%. According to the Petitioner, the net annual production has been based on recommendations of the Equipment Supplier (Goldwind). The net annual energy production has been decreased from 141.089 GWh (last determined) to 131.662 GWh, which is contrary to the argument made by DPPL at page 5 para 2.4.3 of its tariff petition reproduced as hereunder:

> " Change of turbine make and model also affects the annual power production of the wind farm. Due to the latest gearless technology, the expected production of power is estimated more than the previous estimation"

8.2 Net annual production approved by the Authority in case of ZORLU, based on the same technology/make and model of wind turbines, was 149.137 GWh (plant factor of 34.39%). The issue of DPPL's net annual production was raised in the public hearing, wherein it was decided by the Authority to refer the matter to Alternate Energy development Board (AEDB) for verification of its production estimates. Accordingly, AEDB vide its letter dated October 11, 2008 has forwarded its recommendations based on a study conducted by its independent Consultant (Risoe National Laboratory of Denmark).

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8.3 According to the study carried out by its consultant, AEDB has recommended net annual production of 141.800 GWH (at confidence level of P 70). The net energy production at P50 and P 90 works out to be 155.8 GWh and 121.7 GWh respectively. AEDB has intimated that while calculating net annual production of 141.800 GWh, its consultant has taken into account the technical losses of 3%, power curve density correction of 5%, electrical losses of 2.5% and auxiliary consumption of 1%. The mean air density at the site is approx. 1.165 Kgm^{-3}. The effect on the yield (production) of using an air density of 1.225Kgm^{-3} instead of 1.165 Kgm^{-3} is included in the technical losses as a power curve density correction.

8.4 The Authority considers that net annual energy production of 141.800 GWh based on recommendation of AEDB and study carried out by its independent consultant is fairly reasonable and hence accepted.

(B) <u>Wind Speed Risk</u>

9. Government of Pakistan Policy for Development of Renewable Energy for Power Generation 2006 (Policy for Renewable) provides for wind risk to be borne by the Power purchaser and therefore states;

> "Wind risk is defined as the risk of variability of wind speed and, therefore, of the effective energy output of the wind IPP. This risk shall be absorbed by the power purchaser. For judicious assessment or this risk, a 'Benchmark Wind Speed' based on monthly 'Mean of Means' of wind speed will be determined from the available wind data. This will entail determining wind speed benchmarks from the data collected at a certain height above ground level (say, 30 meters) and its extrapolation by standard formulae to the turbine height of the proposed wind farm. Energy production corresponding to the benchmark wind shall be called 'Benchmark Energy Production' and the corresponding plant capacity shall be called 'Benchmark Capacity'.
>
> In practice the actual energy production and capacity may vary from the benchmark levels due to:
>
> i. Variation of wind from the benchmark (a factor beyond the control of the wind power generator).
> ii. Availability of the plant for electricity generation (within the control of the wind power generator).
>
> The principle to be adopted is that the wind IPP will be made immune to factors which are beyond its control (i.e., variability of wind speeds), but fully responsible for factors within its control (i.e., the availability of the plant)".

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9.1 Based on the recommendation of AEDB the net annual energy production (benchmark energy production) has been approved while taking into consideration the following basis parameters.

Annual Plant Capacity Factor	=	32.70%
Benchmark Wind Speed	=	7.4 m/sec at 85 m height
Air density	=	1.225 Kgm^{-3} (yield adjusted with on site air density of 1.165 Kgm^{-3})

9.2 NEPRA has not been provided with a monthly benchmark energy at varying wind speed (from cut-out to cut-in) of the wind farm on monthly basis based on the verified net annual benchmark energy production of 141.8 GWh. DPPL is, therefore, directed to provide the aforesaid to the Power Purchaser for the purpose of calculation of wind speed risk and its inclusion in the Power Purchase Agreement (PPA) to be signed between DPPL and the Power Purchaser (CPPA).

(C) Project Cost

10. DPPL has projected US$ 133.140 million for its total project cost, which is US$ 25.256 million more than already approved by the Authority for DPPL in its last determination dated July 10, 2007. The comparison of various components of the total project cost, as already approved by the Authority in its last determination for DPPL and now requested by the Petitioner, in its revised tariff petition is given hereunder as already presented at para 5.

Project Cost	Previous Determination	Claimed Rev. Petition	Inc/Dec
	US$ Mln	US$ MIN	US$ Mln
Equipment	69.800	85.552	15.752
Substation & electrical works	11.749	13.921	2.172
Civil Work	11.876	14.262	2.386
Insurance	1.115	1.600	0.485
Access Roads	0.940	1.628	0.688
Supervision	1.260	1.260	0.000
Engineering	1.710	1.710	0.000
Total EPC cost	98.450	119.933	21.483
Other Costs			
Project development	2.422	2.629	0.207
Project management	0.750	1.110	0.360
Other Fees	1.210	1.210	0.000
Financing Fee etc	1.576	4.656	3.080
Interest During Construction	3.476	3.602	0.126
Total Other Costs	9.434	13.207	3.773
Total Project Cost	107.884	133.140	25.256

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10.1 According to the petitioner, the main reason for increase in the project cost is attributed to change of equipment supplier, affect of inflation and changed investment market for the lenders. DPPL, in support, has provided a copy of the revised EPC Contract with AXOR Inc. as documentary evidence.

10.2 For working out different components of the project cost and the requested tariff in the local currency, DPPL has based its working on an exchange rate of 1US$= Rupees 61, and 1 Euro = Dollars 1.3441. Since, the current exchange rates with respect to local currency (Rupee) have considerably changed, therefore, the following currency exchange rates have been applied in our calculations for the different components of cost/tariff.

1 US$= Rupees 79.79
Euro= Rupees 100.78
1 Euro = Dollars 1.2631

Energy Equipment Cost

10.3 DPPL has stated that energy equipment cost of US$ 85.552 million (Euro 63.650 million) is inclusive of transportation of equipment from China to CIF Karachi Port. DPPL has not provided cost break-up of the energy equipment cost and transportation cost separately. The Engineering, Procurement and Construction (EPC) Contract between DPPL and AXOR Inc. also does not provide the break-up of energy equipment cost and transportation cost separately. Considering transportation of energy equipment from its manufacturers based in China, DPPL does not qualify for Euro/Dollar parity adjustment in the transportation cost of the energy equipment. Nevertheless, the Authority accepts energy equipment cost of Euros 63.650 million. DPPL, however, shall be allowed Euro/Dollar parity adjustment in the energy equipment cost, on the basis of actual upon production of authentic documentary evidence, at the time of Commercial Operation Date (COD).

Other EPC and Non-EPC Costs

10.4 The cost of sub-station & electrical works and civil works, in the comparable case of Zorlu, was US$ 6.488 million and US$ 4.003 million respectively. The scope of civil works in the case of DPPL is slightly different from that of Zorlu, as the project site of the former is located in the marshy area of Gharo and for the latter it is at Jhimpir which is comparatively solid in texture. However, there is an enormous difference in the cost of substation & electrical and civil works between Zorlu and DPPL, which is not justified and the same is the case for other EPC cost components (such as Insurance, Supervision and Engineering Costs)

10.4.1 According to the Petitioner, it has submitted a revised tariff petition due to change of equipment supplier and the associated costs for redetermination of tariff. The Petitioner has provided a copy of the revised EPC contract for US$ 119.933 million as its EPC cost, with AXOR Inc. who is also a Joint Venture Partner of DPPL for this project. The revised EPC cost (US$ 119.933

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million) as proposed by the petitioner is significantly on the higher side as compared to US$ 98.45 million, already approved by the Authority in its last determination for DPPL on July 10, 2007. The Power Purchaser (CPPA) in its comments has also shown its concerns over the increased cost of EPC and other costs of the project and requested that NEPRA should exercise strict control over the project costs so as to keep tariff at the minimum possible level. Almost similar comments have been offered by the Hyderabad Electric Supply Company (HESCO).

10.4.2 Examination of the information provided by DPPL as well as other relevant information provided by it in response to the comments of various stakeholders, revealed that DPPL has not been able to justify with substantial evidence, further increase in various project cost components over the costs already allowed to it in the last determination of the Authority. The Authority considers that, in view of the sluggish economic activity internationally as well as the current declining trend of prices for the steel, cement, fuel and other construction materials in the local market, any increase sought by DPPL in the EPC and Non-EPC components of the project cost is not justified. The Authority has, therefore, decided not to allow further increase in any of the EPC and Non-EPC cost components over the costs already approved by the Authority in its last determination dated July 10, 2007,.except insurance during construction, financial charges and interest during construction as discussed below:

Insurance during Construction, Financial charges and Interest during Construction

10.5 The Authority considers that the current security and law & order situation in the country has impacted on risks of the insurance companies as well as the lending agencies and therefore, the cost of insurance during construction and the cost of financing fee/charges already allowed to DPPL need to be reviewed. Accordingly, the Authority has decided to allow US$ 1.600 million for the Insurance during construction as per demand of the Petitioner. DPPL has also been allowed US$ 2.80 million for the cost of financing fee/charges which is equivalent to 3% of the total debt amount. DPPL, however, shall not be allowed any adjustment in future in the aforementioned cost on any account.

10.5.1 The interest during construction of US$ 3.602 million as proposed by the Petitioner is an estimated amount, which shall be adjusted as per actual draw down of loans during the construction period of one year as well as the prevailing interest rate at the time of COD.

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11. Recapitulating, the approved cost for various components of the project is given hereunder;

Project Cost Component	Approved cost (US$ Million)
Energy Equipment including transportation cost	80.396
Substation and Electrical works	11.749
Civil Work	11.876
Insurance during construction	1.600
Access Roads	0.940
Supervision	1.260
Engineering	1.710
EPC Cost	109.531
Project Development	2.422
Project management	0.750
Other fees	1.210
Financing fee/charges	2.820
Interest during construction	3.602
Total Project cost	120.336

11.1 The cost of sub station & electrical works US$ 11.749 million and the cost of civil works US$ 11.876 million shall, however, be adjusted downward as per actual after verification through documentary evidence at the time of COD.

(D) Debt Service

12. DPPL has stated that 80% of the total project cost shall be financed through loans. It has further been stated by the Petitioner that debt will be financed in foreign currency (USD) and local currency (PKR) with a tenor of 10 years plus 12 months grace period and at premium of 300 basis points over LIBOR or KIBOR. Accordingly the Petitioner has calculated its debt service component at LIBOR of 5.4% plus 3% premium (total 8.4%) and for local financing it has used a KIBOR rate of 9.5% plus 3% Premium (total 12.5%). The petitioner has also requested for indexation of exchange rate (PKR/US$) and for the variation in LIBOR and KIBOR.

12.1 The Petitioner, however, has not indicated the exact proportion or mix of foreign and local debt in the total debt. However, 100% foreign debt has been assumed at this stage for working out debt service component of tariff for DPPL. This shall be adjusted at the time of financial close based on actual composition of local and foreign debt as the case may be.

(E) Return on Equity (ROE)

13. DPPL has proposed that 20% of the total project cost shall be financed through owners' equity. The Petitioner has further stated that 100% equity investment has been assumed in US dollars. However, final currency of the equity investment (or portions thereof) will be decided

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among the shareholders at the time of financial close. The petitioner has, therefore, requested 15% return on equity (IRR based) net of withholding tax on dividends as well as indexation based on inflation (US CPI or WPI) and PKR/US$ exchange rate variation during the projects contracted life of 20 years.

13.1 Return on Equity (ROE) of 15% (IRR based) net of withholding tax, based on 100% foreign investment, as requested by the petitioner, is in line with the decision of the Authority for other wind power plants and hence accepted. However, the GOP Policy for Renewables 2006 does not allow any indexation on account of inflation. Therefore, DPPL can not be allowed any indexation in the ROE component of tariff on account of inflation either in the foreign or local equity as the case may be.

(F) Operation & Maintenance Cost

14. DPPL has stated that Operation and Maintenance (O&M) cost for its project will be handled by the equipment manufacturer (Goldwind) during the warranty period. Thereafter another O&M contract will be entered into with AXOR Inc. The Petitioner has, therefore, proposed its annual O&M cost in two parts for 20 years of its project life. It has, therefore, estimated per annum O&M cost of US$ 1.3347 million for the first five years of plant operation and US$ 1.632 million per annum for the remaining period of 15 years. It has also been stated by the petitioner that most of the personnel and other O&M costs for wind power projects is fixed in nature (about 92%). The following break-up of fixed and Variable cost per annum has been provided by the Petitioner.

O & M Cost per annum	1-5 years US$ Mln	6-20 years US$ Mln
Fixed O&M- Local	0.701	0.701
Fixed O&M-Foreign	0.529	0.787
Total Fixed	**1.230**	**1.488**
Variable O&M- Local	0.023	0.023
Variable O&M-Foreign	0.081	0.121
Total Variable	**0.104**	**0.144**
Total O&M cost per annum	**1.334**	**1.632**

14.1 Annual Operation & Maintenance cost already allowed to DPPL in the last determination of the Authority was US$ 1.650 million per annum, comprising US$ 1.075 million as fixed O&M and US$ 0.575 million as variable O&M cost. The Petitioner has stated that its selected energy equipment (Goldwind GW 77-1500 KW wind turbines) being gearless machines, among other advantages, require lower O&M cost per annum as compared to the other conventional wind turbines.

14.2 The Authority considers that the per annum O&M cost requested by the Petitioner is reasonable and, hence, accepted. DPPL shall be allowed indexation/adjustment in the fixed and variable O&M (local and foreign) components of tariff as admissible under the GOP policy for

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Renewables 2006, on production of documentary evidence at the time of COD and, thereafter, on quarterly basis in accordance with the mechanism stipulated in the order of the Authority.

(G) Insurance

15. DPPL has proposed US$ 0.868 million for its annual insurance expense during the operational phase of the project, which is about 0.9% of its plant and equipment cost.

15.1 The Authority considers that the requested annual insurance expense of US$ 0.868 million is within the maximum limit of 1.35% allowed to other such IPPs and, hence, accepted. DPPL shall be allowed annual adjustment in the Insurance component of tariff on account of exchange rate variation (PKR/US$) on production of documentary evidence, which shall, however, be limited to maximum of 1.35% of its Plant & Equipment cost.

16. Based on the approved cost for the various project components in the preceding paragraphs, the cost component wise reference tariff table for DPPL is attached as Annex-I.

ORDER

17. Pursuant to Rule 6 of the NEPRA Licensing (Generation) Rules 2000, Dawood Power (Pvt) Limited (hereinafter the "DPPL") is allowed to charge the following specified/approved tariff for delivery of electricity to CPPA of NTDC for procurement on behalf of Ex-WAPDA Distribution Companies:

Tariff Components	Year 1-5 RS/kWh	Year 6-10 Rs/kWh	Year 11-20 Rs/kWh	Indexation
Fixed Charges				
Fixed O&M Local	0.3944	0.3944	0.3944	WPI
Fixed O&M Foreign	0.2977	0.4428	0.4428	PKR/US$, US CPI
Insurance	0.4884	0.4884	0.4884	PKR/US$
Debt Service	8.0604	8.0604	-	LIBOR/KIBOR
Return on Equity	2.1635	2.1635	2.1635	PKR/US$
Variable Charge				
Variable O&M (Local)	0.0129	0.0129	0.0129	WPI
Variable O&M (Foreign)	0.0456	0.0681	0.0681	PKR/US$, US CPI
Total	11.4629	11.6305	2.6494	

i) The reference tariff has been calculated on the basis of 32.70% Plant Capacity Factor.

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ii) The above charges will be limited to the extent of annual generation of 141.800 GWh. Any annual generation in excess of 141.800 GWh would be charged at 10% of the above sale rate.

iii) In the above tariff no adjustment for CERs has been accounted for. However, upon actual realization of CERs, the same shall be distributed between the power purchaser and DPPL in accordance with the approved mechanism as given in the GoP Policy for Development of Renewable Energy 2006.

iv) The reference Euro/Dollar parity has been assumed at 1.2631. The Rupee/Dollar exchange rate has been assumed as 79.79.

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

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

vii) Debt Servicing Schedule is attached as Annex-II

The following indexations shall be applicable to the reference tariff:

I. One Time Adjustment

(i) Cost of Debt

a. The Principal repayment and the cost of debt shall be adjusted at Financial Closing as per actual borrowing composition i.e foreign and/or local.

b. Interest During Construction (IDC) shall be adjusted at COD according to the actual disbursement of loan and the prevailing LIBOR/KIBOR rates..

c. After COD, Interest part of the tariff component shall be adjusted on quarterly basis for variation in LIBOR (issued by British Bankers Association (BBA)) and KIBOR (issued by Karachi Inter Bank Offer Rate) for the foreign and local financing respectively.

DPPL shall submit the relevant documents to NEPRA within seven (7) days of COD for adjustment of relevant tariff components.

ii) Adjustment in project cost due to variation in Euro/Dollar parity

Any variation in the cost of energy equipment during the project construction period on account of variation in Euro/Dollar rate parity over the reference Euro/Dollar rate parity of 1.2631 shall be allowed through adjustment in the project cost. The energy equipment cost of Euro 63.650 million is inclusive of energy equipment transportation cost. For the purpose of this adjustment, petitioner shall provide evidence of actual payment along with the exchange rate prevalent on the date of particular transaction. DPPL's reference tariff table

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shall be revised at COD to incorporate all the permissible adjustments during the project construction period.

II. Pass-Through Items

No provision for income tax has been accounted for in the tariff. If DPPL is obligated to pay any tax, the exact amount paid by the company may be reimbursed by CPPA to DPPL on production of original receipts. This payment may be considered as pass-through payment (as Rs./kWh) spread over a 12 months period in addition to fixed charges proposed in the Reference Tariff. Furthermore, in such a scenario, DPPL may also submit to CPPA details of any tax shield savings and CPPA will deduct the amount of these savings from its payment to DPPL on account of taxation.

Withholding tax is also a pass through item just like other taxes as indicated in the government guidelines for determination of tariff for new IPPs. Withholding tax shall be paid @ 7.5% of the reference equity. CPPA (NTDC) shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 15% equity according to the following formula:

Withholding Tax Payable = $[\{15\% * (E_{(Ref)} - E_{(Red)}\} \times 7.5\%]$

Where:

$E_{(Ref)}$ = Reference Equity (US$ 24.0670 million x 79.79)

$E_{(Red)}$ = Equity Redeemed

In case the Company 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 Company is able to recover the same as a pass through from the Power Purchaser in future on the basis of the total dividend pay out.

III. Indexations:

The following indexations shall be applicable to the reference tariff;

i) Indexation applicable to O&M

The local part of the fixed O&M cost will be adjusted on account of inflation (WPI) and foreign fixed O&M cost will be adjusted on account of variation in dollar/rupee exchange rate and US Consumer Price Index (CPI). Quarterly Adjustment for local inflation, foreign inflation and exchange rate variation will be made on 1st July, 1st October, 1st January & 1st April respectively on the basis of average of the latest available information with respect to Wholesale Price Index (WPI) (notified by the Federal Bureau of Statistics), 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 in accordance with the standard practice adopted by the power purchaser. The mode of indexation will be as follows:

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(a) Fixed O&M

i) $F\ O\&M_{(LRev)} = 0.3944 * WPI_{(REV)} / 145.01$

ii) $F\ O\&M_{(FRev)} = 0.2977 * US\ CPI_{(REV)} / 216.573 * ER_{(REV)} / 79.79$

Where:

$F\ O\&M_{(LRev)}$ = the revised applicable fixed O&M local component of the fixed charges indexed with WPI

$F\ O\&M_{(FRev)}$ = the revised applicable fixed O&M foreign component of the fixed charges indexed with US CPI and currency fluctuation

$WPI_{(REF)}$ =145.01- WPI (manufactures) for the month of October 2008 notified by the Federal Bureau of Statistics

$WPI_{(REV)}$ = the revised Wholesale Price Index (manufactures)

$US\ CPI_{(REF)}$ = 216.573- US CPI notified by US Bureau of Labor Statistics (All urban consumers) for the month of October 2008.

$US\ CPI_{(REV)}$ = Revised US Consumer Price Index as notified by the US Bureau of Labor Statistics (All Urban Consumers)

$ER_{(REV)}$ = the revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

Note: Fixed O&M foreign component of Rs. 0.4428/kWh for the period of 6-20 years shall also be adjusted according to the above formula.

(b) Variable O&M

The formula for indexation of variable O & M local and foreign component will be as under:

$V\ O\&M_{(LREV)} = 0.0129 * WPI_{(REV)} / 145.01$

$V\ O\&M_{(FREV)} = 0.0456 * US\ CPI_{(REV)} / 216.573 * ER_{(REV)} / 79.79$

Where:

$VO\&M_{(LREV)}$ = The revised applicable variable O&M local component indexed with WPI.

$VO\&M_{(FREV)}$ = The revised applicable variable O&M foreign component indexed with US CPI and currency fluctuation.

$WPI_{(REF)}$ = WPI (Manufactures) for the month of October 2008 notified by the Federal Bureau of Statistics.

$WPI_{(REV)}$ = The revised WPI as notified by the Federal Bureau of Statistics

$US\ CPI_{(REF)}$ = 216.573 US CPI for the month of October 2008 notified by the US Bureau of Labor Statics (All Urban Consumers)

$US\ CPI_{(REV)}$ = Revised US Consumer Price Index as notified by the US Bureau of

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Labor Statistics (All Urban Consumers)

$ER_{(REV)}$ = The Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

c) Adjustment in Insurance Component

Insurance component of reference tariff shall be adjusted as per actual subject to maximum of 1.35% of Plant & Equipment Cost on yearly basis upon production of authentic documentary evidence by DPPL according to the following formula:

Insurance (Revised) = $0.4884^* ER_{(REV)}/79.79$

Where;

$ER_{(REV)}$ = The Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

d) Adjustment for LIBOR/KIBOR variation

The interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to variations in interest rate as a result of variation in quarterly LIBOR or KIBOR, as the case may be, with premium over LIBOR/KIBOR remaining the same i.e 3%, according to the following formula:

$$\Delta I = P_{(REV)} * (LIBOR_{(REV)} - 5.4\%) / 4$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in three month LIBOR. Δ I can be positive or negative depending upon whether $LIBOR_{(Rev)}$ > or < 5.4%. The interest payment obligation will be enhanced or reduced to the extent of Δ I for each quarter under adjustment applicable on quarterly basis.

$P_{(REV)}$ = the outstanding principal (as indicated in the attached debt service schedule to this order at Annex-II) on a quarterly basis on the relevant quarterly calculations date. Period 1 shall commence on the date on which the 1st installment is due after availing the grace period.

Adjustment on account of local inflation, US CPI indexation, foreign exchange variation and LIBOR/KIBOR variation will be approved and announced by the Authority within seven working days after receipt of DPPL's request for adjustment in accordance with the requisite indexation mechanism stipulated herein.

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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 or other equivalent standards. All plant and equipment shall be new.

Power Curve of Wind Farm

The power curve of the Wind Farm shall be verified by the power purchaser, as part of the Commissioning tests according to the latest IEC standards and shall be used to measure the performance of the wind turbines.

Wind Power Plant's Performance Data

DPPL 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 for record of data.

Delivery Point

As per Article 11 of the Generation License, DPPL shall deliver power at 132 kV at the door step of its wind farm. Up-gradation of generation voltage up to 132 kV will be the responsibility of DPPL.

Emissions Trading/ Carbon Credits

DPPL would process and obtain emissions/carbon credits expeditiously and credit the proceeds to the Power Purchaser as per the policy issued by the Federal Government and agreed terms between the generator and the purchaser.

The above tariff and terms and conditions will be incorporated as the specified tariff approved by the Authority pursuant to Rule 6 of the Licensing (Generation) Rules, in a Power Purchase Agreement between DPPL and CPPA. The tariff and terms and conditions along with reference tariff table and debt service schedule as attached thereto are recommended for notification by the Federal Government in the official gazette in accordance with the Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

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Annex-I

DAWOOD POWER (PVT) LIMITED
REFERENCE TARIFF

Year	Variable O&M Local	Variable O&M Foreign	Fixed O&M Local	Fixed O&M Foreign	Insurance	Return on Equity	Withholding Tax @7.5%	Loan Repayment	Interest Charges	Tariff *
	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh	Rs. / kWh
1	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	3.6223	4.4381	11.6252
2	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	3.9363	4.1241	11.6252
3	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	4.2775	3.7829	11.6252
4	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	4.6483	3.4121	11.6252
5	0.0129	0.0456	0.3944	0.2977	0.4884	2.1635	0.1623	5.0512	3.0092	11.6252
6	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	5.4890	2.5713	11.7929
7	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	5.9649	2.0955	11.7929
8	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	6.4819	1.5785	11.7929
9	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	7.0438	1.0166	11.7929
10	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	7.6544	0.4060	11.7929
11	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
12	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
13	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
14	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
15	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
16	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
17	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
18	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
19	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
20	0.0129	0.0681	0.3944	0.4428	0.4884	2.1635	0.1623	-	-	3.7325
Levelized Tariff	**0.0129**	**0.0581**	**0.3944**	**0.3782**	**0.4884**	**2.1635**	**0.1623**	**3.6639**	**2.1536**	**9.4754**

Levelized Tariff (1-20 years) discounted at 10% per annum = US Cents 11.8754/kWh at reference exchange rate of 1US$=Rupees 79.79.

* ***The above rate is limited to an annual energy production up to 141.800 GWh. Any generated energy beyond 141.800 GWh in a year will be charged at 10% of the Reference Tariff for that year.***

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Annex-II

DAWOOD POWER (PVT) LIMITED
Debt Servicing Schedule

Period	Foreign Debt					Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh	Annual Debt Servicing Rs./kWh
	Principal Million $	Repayment Million $	Mark-Up Million $	Balance Million $	Debt Service Millin $			
	96.27	1.56	2.02	94.71	3.5812			
	94.71	1.59	1.99	93.12	3.5812			
	93.12	1.63	1.96	91.49	3.5812			
	91.49	1.66	1.92	89.83	3.5812			
1	96.27	6.44	7.89	89.83	14.3246	3.6223	4.4381	8.0604
	89.83	1.69	1.89	88.14	3.5812			
	88.14	1.73	1.85	86.41	3.5812			
	86.41	1.77	1.81	84.64	3.5812			
	84.64	1.80	1.78	82.84	3.5812			
2	89.83	7.00	7.33	82.84	14.3246	3.9363	4.1241	8.0604
	82.84	1.84	1.74	80.99	3.5812			
	80.99	1.88	1.70	79.11	3.5812			
	79.11	1.92	1.66	77.19	3.5812			
	77.19	1.96	1.62	75.23	3.5812			
3	82.84	7.60	6.72	75.23	14.3246	4.2775	3.7829	8.0604
	75.23	2.00	1.58	73.23	3.5812			
	73.23	2.04	1.54	71.19	3.5812			
	71.19	2.09	1.49	69.10	3.5812			
	69.10	2.13	1.45	66.97	3.5812			
4	75.23	8.26	6.06	66.97	14.3246	4.6483	3.4121	8.0604
	66.97	2.17	1.41	64.80	3.5812			
	64.80	2.22	1.36	62.58	3.5812			
	62.58	2.27	1.31	60.31	3.5812			
	60.31	2.31	1.27	58.00	3.5812			
5	66.97	8.98	5.35	58.00	14.3246	5.0512	3.0092	8.0604
	58.00	2.36	1.22	55.63	3.5812			
	55.63	2.41	1.17	53.22	3.5812			
	53.22	2.46	1.12	50.76	3.5812			
	50.76	2.52	1.07	48.24	3.5812			
6	58.00	9.75	4.57	48.24	14.3246	5.4890	2.5713	8.0604
	48.24	2.57	1.01	45.67	3.5812			
	45.67	2.62	0.96	43.05	3.5812			
	43.05	2.68	0.90	40.37	3.5812			
	40.37	2.73	0.85	37.64	3.5812			
7	48.24	10.60	3.72	37.64	14.3246	5.9649	2.0955	8.0604
	37.64	2.79	0.79	34.85	3.5812			
	34.85	2.85	0.73	32.00	3.5812			
	32.00	2.91	0.67	29.09	3.5812			
	29.09	2.97	0.61	26.12	3.5812			
8	37.64	11.52	2.81	26.12	14.3246	6.4819	1.5785	8.0604
	26.12	3.03	0.55	23.09	3.5812			
	23.09	3.10	0.48	19.99	3.5812			
	19.99	3.16	0.42	16.83	3.5812			
	16.83	3.23	0.35	13.60	3.5812			
9	26.12	12.52	1.81	13.60	14.3246	7.0438	1.0166	8.0604
	13.60	3.30	0.29	10.31	3.5812			
	10.31	3.36	0.22	6.94	3.5812			
	6.94	3.44	0.15	3.51	3.5812			
	3.51	3.51	0.07	(0.00)	3.5812			
10	13.60	13.60	0.72	(0.00)	14.3246	7.6544	0.4060	8.0604

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Annex - A

Dawood Power

DAWOOD POWER (Pvt) Ltd

[Formerly WIN POWER (Pvt) Ltd]

1500-A Saima Trade Towers, I.I. Chundrigar Road, Karachi 74000, Pakistan @
UAN : +9221 111-DAWOOD, Tele : +9221 227 1874 Fax : +9221 227 1912 email : dawoodpower1firstdawood.com

No: PVCL/WP/12

July 05, 2008

The Registrar,
National Electric Power Regulatory Authority,
2nd Floor, OPF Building,
Shahrah-e-Jamhuriat, G-5/2,
Islamabad.

Dear Sir,

Subject: REVISED TARIFF PETITION FOR 50 MW WIND POWER GENERATION PLANT AT GHARO-SINDH

Through this petition, submitted in one original and two copies, we wish to present our case for approval of revised tariff for our proposed wind power project at Gharo. We reaffirm that this petition has been prepared in accordance with NEPRA Tariff Standards & Procedure Rules 1998. Care has been taken to provide all information required by the rules accurately and in a methodical fashion. As such we bring to your kind attention the following:

1. Dawood Power (Pvt) Ltd, *formerly Win Power (Pvt) Ltd* was granted tariff by NEPRA on July 10th 2007 on a Review Petition. This Revised Petition is in continuation of the same.

2. A Demand Draft No. 0000488 dated 5th July 2008 in the sum of Rs 1,253,500/= being the non-refundable Tariff Petition fee is attached herewith.

3 Other formalities like the Affidavit and Board resolution etc are also attached with the petition.

In light of the above, and considering the impending power shortages, may we request that the petition be determined expeditiously.

Kindly acknowledge receipt.

Yours Sincerely,

AVM (R) S J Raza
Chief Executive officer

Encl : As stated

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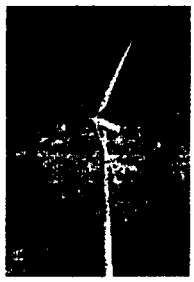


DPPL

Revised Tariff Petition

For

50 MW Wind Power Project

at

Gharo – Sindh

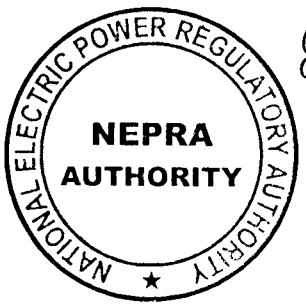
PREPARED AND FILED AS PER

Nepra Tariff Standards & Procedure Rules, 1998

DAWOOD POWER (PVT) LTD.

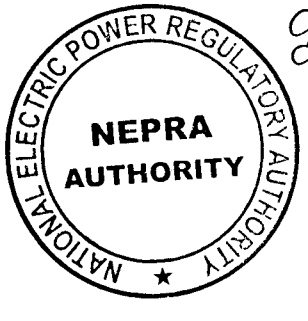
Formerly Win Power (Pvt) Ltd.

1500-A Saima Trade Towers,
I.I. Chundrigar Road,
Karachi -74000
UAN: +9221 111DAWOOD
Fax: +9221 227 1912
email: dawoodpower@firstdawood.com



CONTENTS

Note: A Project Summary is pleased at Annexure V



This Revised Petition has been prepared in light of the PROCEDURE set forth in Part II of the Rules

1. PRELIMINARY

1.1 Petitioner's Name And Address

Dawood Power (Private) Limited ("DPPL" or "the Company")
{Formerly Win Power (Private) Limited}
1 500-A, Saima Trade Towers,
I. I Chundrigar Road,
Karachi-74000,
Pakistan.

Tel: +92-21-111-329-663
Fax: +92-21-227-1912
email: dawoodpower@firstdawood.com

1.2 Petitioner's Representatives

- AVM (R) S J Raza, Chief Executive Officer
  Contact Number: (Mobile) +92300 827 2826)

- Mr. Bryan Fitzpatrick, Vice President, AXOR Group Inc, JV Partner
  Office Telephone No: +001 514 846 4000

1.3 Background

Dawood Power (Pvt) Ltd (DPPL), formerly Win Power (Private) Limited a company registered in Dec 2004 for the purpose of doing business of power generation, was among the first ten companies to obtain an LOI from the Alternate Energy Development Board (AEDB) for generating 50 MW by wind power. Having done all its required ground work, such as, but not limited to, getting a feasibility done, getting land allocation for the wind farm, signing an EPC contract, selecting an equipment supplier, obtaining a generation license, getting a lending bank on board etc, DPPL filed a petition for a commercially viable tariff to NEPRA. The tariff was finally determined by NEPRA on July 10th 2007, on a Review Petition filed by DPPL on 5th May 2007.

While this tariff was being considered by DPPL for acceptance, the wind power equipment availability in the international market became scarce. DPPL was shocked to realize that NORDEX of Germany, based on whose quotation for the N90 wind turbine, DPPL tariff was obtained, was no longer interested in the Pakistan market. When no positive result was coming by communicating through phone, fax and email, a visit was planned to NORDEX in September 2007. Chairman AEDB who was visiting the Husum Wind Fare in Germany around the same time, also kindly agreed to join this meeting. The idea of having a senior government functionary in the meeting was to remove any inhibitions of the Supplier (NORDEX) regarding the Pakistan market and also to pressurize them to honour their quotation submitted earlier in the year.

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The meeting was held in Hamburg at the Head office of Nordex Gmbh on September 19, 2007. Nordex once again verbally agreed to consider DPPL for turbine deliveries in 2008/09. However, as the political situation started building up in Pakistan in October, Nordex once again started pulling away.

Another effort was made by DPPL to get the equipment from Nordex by meeting the German Consul General in Karachi and after explaining him the case, requesting him to write to Nordex to honour its quotation. The German Consulate in Karachi sent a very strong letter to Nordex in favour of our case, going to the extent of saying that if this deal was not honoured, future business in other fields between the two countries may be jeopardized. However the reply received from Nordex, much to the displeasure of the Consulate and as a total disappointment to Dawood Power, was still evasive and non committal. Unfortunately with the assassination of the PPP Chairperson in December 2007 and further deterioration of political conditions in the country, Nordex even stopped answering phone calls or emails.

Similarly efforts to get quotations from other European suppliers became difficult as the European Union issued travel advisories to its nationals against visiting Pakistan. It was therefore obvious that all efforts in getting European equipment for the proposed DPPL wind farm would be wasteful.

In consultation with our technical partner, the company evolved a new strategy and obtained quotations from other internationally reputed manufacturers in the US, Canada, India and China. After technical due diligence and consultation with the lending bank, Standard Chartered Bank UK (SCB UK), in March 2008, the company board gave its go ahead for procuring wind turbines from Goldwind Science and Technology Company of China. Although their order books were also full till 2010, yet honouring the Pak-China friendship, the company signed an MOU with DPPL on March 7th 2008 for supply of its GW77 1.5 MW wind turbine with deliveries promised in August 2009.

In light of the above, DPPL is constrained to file a Revised Petition where in the Turbine Supplier, the major Equipment (Wind Turbines), and hence the production etc needs to be changed. As a direct consequence, the demanded tariff has also to be revised. It may be noted that between the last review petition and now, more than one year has lapsed. This one year has also seen excessively high inflation in the country and sky rocketing oil prices in the international market which have resulted in higher costs of everything including even transportation of equipment. As such while DPPL has made all efforts to keep the tariff as low as possible, owing to the circumstances beyond our control, it has come out to be a higher figure than what was approved by Nepra in 2007.

This revised petition may therefore be considered in continuation of our previously determined Revised Tariff Petition under reference number NEPRA/TRF-73/DPPL-2007.

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2. SELECTION OF EQUIPMENT AND REASONS FOR FILING THIS REVISED PETITION

2.1 Equipment Selection for The Wind Farm (Encore)

As explained above, owing to the negative response of the European suppliers, DPPL was left with no choice but to carry out a selection of equipment encore to suit the project both technically, commercially and in view of the desired timeline for the project. Proposals were sought from wind generation equipment manufacturers based on the following defined criteria:

- Equipment to be latest technology, Megawatt class and high efficiency
- Compliance of proposed wind turbine with local wind conditions in Pakistan
- Relation between final investment costs and operation cost to the estimated energy yield
- Cost of Equipment to be competitive
- Commitment to the market: Willingness to commit to the Pakistan market with regard to set-up or support in setting up a local service organization
- Energy output: Warranted power curve, performance warranty
- Grid compatibility: WEC must comply with the latest grid condition requirements
- Track record of the manufacturer
- Suitability of O&M concept for the size and location of projects, availability of spare parts, consumables and main components

Based on these criteria and an extensive evaluation of various manufacturers, the Goldwind GW77 - 1.5 MW gearless Wind Turbine has been selected for this project.

2.2 Reasons for Selecting Goldwind as the Manufacturer. Briefly, the reasons for selecting Goldwind as the manufacturer are as follows:

- Goldwind has shown a special consideration and interest in the Pakistan market
- Goldwind is an experienced manufacturer, having produced more than 5,000 of the 750 KW wind turbines in the last five years. These are all installed and producing. By this year end the figure will touch about 7,000.
- Goldwind has been producing 1.2 MW wind turbines as well which gave it the experience of the Mega watt class machines.
- Goldwind bought the license for the 1.5MW gearless machine from the German company Vensys which has done complete R & D for bringing out this successful model. This model is being produced in three countries already.
- Goldwind is a financially very strong company in China and has recently purchased the parent German company Vensys as well.
- Our Lending bank, SCB UK, has cleared Goldwind for this transaction.
- Goldwind is a private enterprise and has its shares held with certain large public sector enterprises.
- Goldwind has modern production facilities at three different locations, Beijing, Urumuqi and Boatou.

2.3 Reasons for selecting the GW 77 – 1500KW Gearless WTG. Similarly the reasons for selecting this particular model of the wind turbine (GW77) are as follows:

- GW 77/1500 is a latest technology gearless design WTG. Experience has shown that the main assembly that caused problems in turbines during operations was the gearbox. Gearless turbines therefore have a definite advantage. Its other advantages are:

    1. Gearboxes are noisy which necessitates expensive noise insulation measures.
    2. Gearless units do not require gear oil servicing nor do they produce leaks.
    3. There are no gear losses which is a great advantage particularly at partial load.
    4. It is supposed to provide better availability.
    5. It offers higher energy output and better efficiency.
    6. It has a Synchronous generator with permanent magnet excitation with high efficiency. It has no energy losses because of an external excitation and no slip rings for external excitation needed.
    7. It can generate electricity even in case of power shortage in the grid.

- No additional fans or control units are needed because of the passive air-cooling system. The cool air flow which drives the rotor is guided directly over the warm generator parts by specially formed cooling ducts. It is highly efficient cooling without any additional energy. Especially in Pakistan with extremely hot weather conditions, this is a big advantage.
- The pitch control of the turbine does not need any oil servicing.
- The pitch system is working without gearwheels. The WTG is using toothed belt.
- Instead of batteries which would need maintenance and replacement from time to time, the pitch system use capacitor as power source whereas the design life of the capacitor is twenty years.
- GW 77/1500 can be delivered in August 2009
- Goldwind has tested this machine by running its prototype consecutively for three years at their testing park in Urumuqi, China.
- Goldwind has selected this turbine for a 50MW wind farm outside Beijing. This wind farm has been erected recently and commissioned in February-March 2008. It will be providing *"clean and green"* power to the Beijing Olympic games, due to commence in Beijing on 08/08/08.
- Goldwind has extensive plans for producing this particular model in large quantities, reaching almost 5000 units by 2010! This itself shows the confidence of Goldwind in this model.
- Projected annual manufacturing capacity of this gearless model turbine is:

    - Year 2007 2008 2009 2010
    - # of Units 60 700 2000 2000

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2.4 Reasons for filing Revised Petition. DPPL has been constrained to move this revised petition primarily due to the change in supplier. However some other factors also contributed to the revised figures. These are described below:

2.4.1 Change of Supplier. For the reasons explained in section 1 above, DPPL had no option but to change the turbine supplier from Nordex of Germany to Goldwind of China. This necessitated a revision in tariff since change of wind turbines automatically meant change in power production as well as change in cost of the new equipment.

2.4.2 Affect of inflation. As over a year has lapsed since we filed the last review petition and in this one year Pakistan has seen a very high inflation rate, cost of all local services and expenses have gone up by 25-30%.

2.4.3 Change in Power Production. Change of turbine make and model also affects the annual power production of the wind farm. Due to selection of the latest gearless technology, the expected production of power is estimated more than the previous estimation.

2.4.4 Financial Cost. Lending Bank has advised us that with the rapid changes in the investment environment in Pakistan and the changed investment market, the financing strategy contemplated initially was no longer viable. According to the new structure, lenders will provide a mix of foreign and local currency debt depending on requirements of foreign currency payments in the project.

Due to this change in the debt structure, Bank's Commitment Fee and other bank charges have also been revised. Similarly, the Bank's Legal and Technical Consultants Fees have also been revised.

2.4.5 Change in Total Project Cost. Rapid increase in Oil prices affected the international pricing due to a general inflation being experienced by all manufacturers. Moreover, the steel prices also shot up in the last one year which has a direct bearing on equipment cost. Equipment cost has also seen a sharp increase due to the gap in demand and supply of wind energy equipment. All these factors have resulted in an un-avoidable increase in project cost.

2.4.6 Insurance Factor. Insurance companies are assigning a higher risk factor to Pakistan in the current year and hence insurance factor has also resulted in a need for revision of overall costs.

2.5 Turbines Selected. Selection criteria of the wind turbines included latest technology, high efficiency and reliability, low maintenance cost, conforming to latest IEC standards and also with suitable delivery dates. After a consummate search and due diligence, the following turbine model was selected for the wind farm:

Manufacturer	Goldwind Science and Technology Company Ltd, China
Wind Turbine Model	GW77- 1,500 KW (Under License from Vensys of Germany)
Hub height	85 m
Number of Turbines	33
Total Installed Capacity	49.5 MW

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2.6 Estimated Output. To estimate output, wind data provided by AEDB from the Gharo Mast was provided to Goldwind China. The data has minute wise wind velocities for each twenty four hour period. Micrositing of turbines was done in the available land area so as to minimize the wake affect. The annual production figures estimated by the wind specialists of the Tian Yuan Company for the GW77 turbines is as follows:

Gross Annual Production	18.108 MW
Warranted technical availability of 95%	17.203 MW
Power Curve Correction 5%	0.905 MW
Wake Losses 2.5%	0.453 MW
Electrical losses 2.5%	0.453 MW
Auxiliary Consumption	0.362 MW
Net Output Delivered	15.030 MW
Net Capacity Factor	30.363%
Hours per year	8,760
Annual Energy Generation	131,662 MWh

2.7 Project Cost and Annual O & M Cost. As is well known, wind energy is capital intensive but has the advantage of no fuel cost pass throughs. So has it turned out in our case; Equipment & Electrical Work cost makes up for almost 75% of the total cost. Construction cost is also high due to location of the wind farm on the sea shore and lack of access roads. It accounts for another about 14% of the project cost. The figures in Million US Dollars are:

	M US$
Total Project Cost	133.140
Debt portion 80%	106.512
Equity 20%	26.628
O & M cost:	
Fixed O & M (Average)	1.424
Insurance (pass through)	0.868
Variable O & M (Average)	0.134
Total O & M cost per year (Avg)	2.426

2.8 Indexation. While wind energy has the advantage of not having fuel as a pass through item in its cost breakdown, there are certain minor costs that are market driven and hence cannot be fixed. We are therefore asking for indexation and/or pass through to the off taker for following heads:

Cost of Debt
Variation during construction
Return on Equity
Dollar Rupee Parity
Dollar Euro Parity
Income Tax
Withholding Tax
O & M Costs
LIBOR/KIBOR Variation
Local Inflation and US CPI, and
Insurance Premium

These are presented in full details in Chapter 4

2.9 Carbon Credits. Carbon Credits are to be earned and disbursed as per Guidelines for Determination of Wind Power Tariff Year 2006" and the GOP Policy on the subject as issued by the Ministry of Environment. However we are of the opinion that we will be in a better position to manage realization of Carbon Credits and so would prefer that 100% be allocated to the Company.

Please turn over

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3 TARIFF STRUCTURE

3.1 Introduction

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

- Pre operating costs
- Development costs
- EPC costs
- Financing costs
- Debt service costs
- O & M costs, Foreign and Local
- Admin and Management costs
- ROE
- Insurance, and
- Other soft costs

It may be emphasized that this working of tariff will hold good for sixty days from the date of submission. Beyond that date, a 2% increase per month must be added till financial close. This is to cater for local and foreign inflation as well as euro/dollar and rupee/dollar parity etc.

The present working is on the same basis as determined by Nepra i.e. based on Rs 61.00 = US$ 1.00 and US$ 1.344 = Euro 1.00 for the purpose of better comparison.

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
  - Debt service
- Escalable Energy Component
  - Local O&M costs
  - Foreign O&M costs
  - Return on equity

3.2 Non-Escalable Energy Component

3.2.1 Debt Servicing

The only non escalable energy component is the debt service cost. It covers repayment of the principal amount and payment of interest charges. The debt is planned to be financed in foreign currency (USD) and local currency (PKR), with a tenor of 10 year plus 12 months grace period which is based on estimated time required for the project to achieve Commercial Operation. Hence, the debt service cost applies only in the first ten years of the Project's operation. For the remaining ten years the debt service cost component would be zero.

As presented in the Tariff Table in Section 5, the debt service component will be fully indexed to the foreign exchange rate (PKR/USD), for the portion of debt financed in foreign currency. Since the debt is expected to be a mix of local and foreign currency funding, the interest charge portion will be indexed against variations in the LIBOR and KIBOR.

Additionally, a one-time adjustment in the EPC price will also be required at the time of 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 Upfront Tariff of other power projects.

Details of debt financing are discussed in section 4.4.2

3.3 Escalable Energy Component

The non-debt, escalable component covers the following items:

- Local O&M Costs
- Foreign O&M Costs; and
- Return on Equity

3.3.1 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.

3.3.2 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 Eurozone CPI as well as Euro/PKR adjustment/indexation.

Insurance Cost

It consists of all risk insurance/re-insurance 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), 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 be a direct pass through to the purchaser

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3.3.3 Return On Equity:

The Return on Equity (ROE) component includes return on invested equity giving an IRR of 15% 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.

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

3.4 Tariff Assumptions:

The following assumptions, which form the basis of the tariff may change between now and the financial close. The tariff will therefore have to be recalculated to account for these adjustments at financial close:

- Financing terms are as yet based on initial discussions with the financial institutions and hence are subject to final negotiations once tariff has been determined by NEPRA and the PPA/IA are signed. This will include mainly the debt-equity ratio, grace period and loan repayment term, base currency of the loan, benchmark index (LIBOR/KIBOR) and the spread margin for the financial institutions over LIBOR/KIBOR, depending on the mix of funding.

- 100% equity investment has been assumed in US dollars. However, final currency of the equity investment (or portions thereof) will be decided among the shareholders at the time of financial close.

- Insurance cost has been assumed at 0.87% based on the indicative rates received from foreign insurance companies. Currency for the premium payment has been assumed as Euro. Premium rate and base currency for the insurance arrangements will be finalized at the time of financial close.

- Base currency for operations and maintenance costs (excluding administrative costs and land lease rental which have been denominated in Pak Rupees) has been assumed as USD. This, however, may be finalized when contracts will be signed with the O&M operator.

Any changes in the above terms will require automatic adjustment in the tariff without referring back to NEPRA.

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4. RATIONALE FOR PROPOSED TARIFFS

4.1 Introduction

The Tariff presented in Chapter 5, and for which DPPL is now seeking determination, is based on the following components:

- Term of the Energy Purchase Agreement (PPA);
- Capital cost for equipment and construction;
- Cost of Debt and Equity;
- O & M Costs;
- Variable cost (which may vary over the term of the PPA, based on inflation, foreign exchange rate and interest rate variations)

Each of these components is discussed in detail in this Chapter.

4.2 Term of the Project / Tariff Control Period

The proposed tariff is sensitive to the term of the project i.e. length of the PPA. As in recent determinations made by NEPRA, typical power generation projects in Pakistan require long-term PPA's. This is driven both by the needs of debt providers/lenders, and in recognition of NTDC's role as the purchaser of the Project's electricity output.

The debt provider/lender's willingness to provide financing for power projects is often conditional on repayment of the loan within 10 years. As this project has a lenders commitment for 80% debt financing over a ten year loan repayment term, this implies a higher fixed charge in the first 10 years of the project, as compared to the remaining ten years (11-20) after the loan has been repaid.

NTDC may face higher tariffs in the earlier years due to debt servicing (1-10), while in the latter years (11-20), the fixed tariff will be reduced to reflect lower associated costs.

A 20-year PPA is therefore proposed for this project. The tariff during this period would specify different rates for the first 10 years and the remaining 10 years, in accordance with Rule 6 of the NEPRA Licensing (Generation) Rules, 2000.

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4.3 Project Cost

4.3.1 Following table reflects a breakdown of the total project cost:

Project Costs	M US$
EPC Contract	119.933
Project Development	2.629
Project Management	1.110
Other Fees	1.210
Financing Fee etc	4.656
Interest During Construction	3.602
Total Project Cost	**133.140**

In the above project cost, we have carried USD$ 85.552 million as cost of the 33 GW 77 1.5 MW GOLDWIND wind turbines. Vendor/Equipment selection process and criteria is discussed in the next section. The main increase in project cost has been attributed to increased prices of the equipment, in particular the Wind Turbine Generators (WTG) due to increase in production cost and world-wide demand for WTGs, local inflation of 15% - 20% and unparalleled increase in fuel cost, steel prices as well as cement prices.

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4.3.2 EPC Costs

The EPC cost with the Axor Group is USD 119.933 million and is valid until December 31, 2008. Besides the cost of wind turbines, towers, balance of plant, electrical works, spare parts and civil works which are integrated in the proposal, transportation cost specifically includes CIF to wind farm site. The major portion of the cost is attributed to plant and equipment, which constitutes approximately 71% of the current amount.

Following table reflects a breakdown of the EPC Cost:

EPC Costs	M US$
Equipment	85.552
Substation & Electric work	13.921
Civil work	14.262
Insurance	1.600
Access roads	1.628
Supervision	1.260
Engineering	0.930
Contingencies	0.780
Total EPC Cost	**119.933**

4.3.3 Other than EPC Costs

Details of the Other Costs are exhibited in the table below:

Other Costs	M US$
Project Development	2.629
Project Management	1.110
Other Fees	1.210
Financing Fee etc	4.656
Interest During Construction	3.602
Total	**13.207**

The Other Costs shown above includes:

- Project Development - This is the cost of developing the project since obtaining the initial LOI in November 2004.
- Project Management - This is the cost of administering and managing the company and project contracts.
- Other Fees - This includes the initial cost for setting up the company and its operations.

- Financing Fee - This consists of the interim financing required for the construction period of the project. In addition, the lenders structuring fees and other charges are included in the figure.

- Interest During Construction. Self explanatory.

4.3.4 Euro-Dollar Conversion

The cost of the EPC contract quoted above has been converted to US $ figures, based on an exchange rate of 1.3441 Dollar to 1.00 Euro to possible fluctuations in the exchange rate between the Euro (being the currency of EPC price) and the Dollar (being the currency for the funding of the EPC contract) at the time of the Project's financial closing.

4.4 Debt and Equity

The total project cost is approximately USD 133.140 Million. The capital structure of the company has been envisaged at a Debt-Equity ratio of 80-20. Given this capital structure and the reference project cost detailed in the prior section, the table below details the amount of equity contributed and the debt to be raised from the capital markets.

Debt & Equity Structure		**M US$**
Debt	80%	106.512
Equity	20%	26.628
Total Project Cost		**133.140**

4.4.1 Equity Structure

Based on the ownership structure of the company, the principal sponsors will be committing up to 20% of the equity. The projected total equity required as per the capital structure is approximately USD 26.628 million to be shared equally between Axor and Dawood.

Rationale for Return on Equity for Wind Power Projects

Guidelines for the Determination of Tariffs for Wind Power Projects ("IPP") requires that the tariff should be determined after allowing for reasonable Internal Rate of Return ("IRR") on equity investment while taking into account the carbon credit which the IPP may get. At present, the mechanism for pricing of carbon credits is uncertain. For the sake of clarity, we have presented the formula below for claiming IRR on equity investment, which equity investors would require. Any incremental income from carbon credits will be shared with the Purchaser separately.

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Equity Investment in Foreign Currency [USD]

In line with recent determinations by NEPRA, we are proposing return on invested equity of 15.00% net of 7.5% withholding tax on dividends. This is based on the premise that the Project will be implemented on a Built Own and Operate Basis ("BOO") over a 20 year term for the Power Purchase Agreement ("PPA"). Return on Equity to be indexed as requested in Para 3.3.3.

Withholding Tax on Dividends

According to the Income Tax Ordinance, 2001 income from dividends is subject to withholding tax (7.5% for power generation projects)

4.4.2 Debt Structure

Commercial loan of approximately 106.512 Million US$ in a mix of local and foreign currency, at the reference project cost detailed in the prior section, will be raised from the debt capital markets in local and foreign currency. The commercial loan facility will have 10-year repayment period with a grace period of approximately one year, and will be payable quarterly.

An annual interest rate of LIBOR and KIBOR plus our lender's spread of 300 basis points, which covers their present risk assessment of the project, equating to around 8.4% for foreign debt (based on LIBOR rate of 5.4% as per Nepra determination 2007) and to around 12.5% for local debt (based on KIBOR rate of 9.5%) have been assumed for our initial working purposes.

4.5Operating Cost

4.5.1 Insurance

The fixed annual insurance expense during the operational phase is estimated at USD 0.868 million. We have taken approximately 0.87% of the Equipment & Substation etc Cost each year, which is to an extent based on indicative quotes of international insurance brokers. This expense is expected to be denominated in foreign currency since the underlying costs are also based in foreign currency. The rationale for the assumed cost is as under:

- Local insurance companies would not be in a position to adequately provide cover for this kind of project given the total cost (in foreign currency) and the lack of precedents for wind power projects in Pakistan.
- The lender/financial institutions will require insurance of the Project's assets on a replacement cost basis, which will inevitably be in foreign currency.

4.5.2 Operation & Maintenance (O&M)

The operation and maintenance functions for this Project will be handled by the manufacturer (Goldwind) during the warranty period. Thereafter another O&M contract will be effective with AXOR. Most of the personnel and other O&M costs for wind power projects are fixed component.

The following table reflects a breakdown of O&M Costs:

O & M Costs	(1 – 5 Years)	(6 – 20 Years)
	M US$	M US$
Fixed Cost Foreign	0.529	0.787
Fixed Cost Local	0.701	0.701
Total Fixed Cost	**1.230**	**1.488**
Insurance	**0.868**	**0.868**
Variable Cost Foreign	0.081	0.121
Variable Cost Local	0.023	0.023
Total Variable Cost	**0.104**	**0.144**
Total O & M Cost	**2.202**	**2.500**

It can be useful to compare the estimated 0&M costs for the Project with a benchmark. The EWEA provides a lifetime cost benchmark for O&M costs, which it estimates at Euro 0.012-0.015 (USD 0.014-0.018) per kWh over the lifetime of the turbines. This includes insurance, regular maintenance, repair, spare parts, and the turbines. Subtracting the insurance costs, results in USD 0.010 - 0.012 per kWh.

The total O&M cost (including Insurance) for the Project is **USD 0.018 per kWh**. This figure is consistent with EWEA cost range.

4.6 Indexation, Escalations And Cost Adjustment

The purpose of indexation is to remove any exposure of an investor to cost escalations, over the life of a 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/Alternative Energy Development Board's, "Guidelines for Determination of Tariff for Wind Power Generation 2006."

4.6.1 Foreign Exchange

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

- Portions of the 0&M components that are denominated in foreign currency;
- The debt service component. The project debt is intended to be funded in a mix of local and foreign currency;

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- The insurance component as discussed previously will provide cover on a replacement cost basis, which will be incurred in Euros. Premiums will therefore be constructed on that basis, and insurance costs will therefore fluctuate with exchange rate movements; and
- The portion of the ROE component that reflects the equity investments in foreign currency (US$ or €)

Indexation for these components should be applied quarterly, on-January 1, April 1, July 1 and October 1 on the basis of the TT & OD selling rate as notified by the National Bank of Pakistan (in Rs/US$ or Rs/€)

4.6.2 LIBOR

The wind farm investor will have no direct control over changes in interest rates. Appropriate indexation should therefore be applied so that the interest charge portion of the debt service component of the tariff reflects changes in the London Interbank Offered Rate (LIBOR). This portion should thus be adjusted quarterly for variations in the 6-month Dollar LIBOR as published by the British Bankers Association.

4.6.3 KIBOR

The wind farm investor will have no direct control over changes in interest rates. Appropriate indexation should therefore be applied so that the interest charge portion of the debt service component of the tariff reflects changes in the Karachi Interbank Offered Rate (KIBOR). KIBOR is defined as the Average rate, Ask Side, for the relevant tenor, as published on Reuters page KIBOR or as published by the Financial Markets Association of Pakistan in case Reuters page is unavailable

4.6.4 Local Inflation

As with currency exchange rates and interest rates, a wind farm investor will not be able to influence local inflation. Appropriate indexation should therefore be applied to reflect the portion of the tariff that is subject to local inflation. For the proposed tariff structure, the following components should be indexed to the local CPI:

- Portions of the O&M component that are denominated in local currency (Rs);
- The portion of the ROE component that reflects the equity investments in local currency (Rs).

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

4.6.5 Eurozone Harmonized Index of Consumer Prices

The O&M and insurance costs are partially denominated in Euros. These are recurrent costs whose amount will be affected by the home country inflation. It is thus proposed that these costs should be adjusted for Eurozone inflation per Harmonized Index of Consumer Prices (HICP) as published by the European Central Bank (ECB). The index is published on monthly basis by ECB.

4.6.6 US Inflation

The equity investment is denominated in US Dollars. As with currency exchange rates and 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 these costs should be adjusted for US inflation per United States Consumer Prices Index (USCPI) as published monthly by the Department of Labor, United States Government.

Note: A Summary of Indexations requested is placed at Annexure I

5. DETERMINATION SOUGHT

5.1 Introduction

Determination is sought from NEPRA in respect of the following:

A) Grant of Tariff, as presented in para 5.2 below, to remain effective for a period of 20 years from the date of Commercial Operations; and

B) Approval of proposed indexations in the Tariff, as setout in the subsequent para 5.3.

5.2 Reference Tariff

The proposed Reference Tariff comprising the non-escalable cost component, as described in section 3.2, and the escalable cost component, as described in section 3.3 is presented in the Table below:

	PKR		US Cents
Average Tariff	7.2674		11.9137
Discount Rate		10%	
Net Present Value	76.28		125.05
Levelized Tariff	8.9598		14.6881

The **tariff shown above is subject to indexation** as given in Annexure I
This tariff is **valid for sixty days** from date of submission (5th July 2008)
Beyond that date a 2% increase per month will be required to account for Local and foreign inflation.

Details of the Reference Tariff are shown in Table placed at Annexure II and
Assumption for Tariff Table at Annexure III
The Project's Cash Flow on the basis of this tariff is shown in Annexure IV

The specified tariff, along with the indexation, when approved, would set the maximum rate at which DPPL will sell power to the off taker.

5.3 Tariff Indexation

Indexation of cost of components of a tariff provides an investor certainty with regard to return on investment by removing exposure to such cost escalations over which investor has no control. This approach is efficient and hence minimizes total cost. Commonly, indexation protects investors against risks arising from exchange rate fluctuations, and local inflation.

Tariff indexation for the DPPL tariff has been requested in relation to known and accepted consumer price indices (CPI), LIBOR/KIBOR, on a quarterly basis and the euro/dollar and dollar/rupee parity as discussed in detail in section 4.6. These adjustments are consistent with those that have been provided in other upfront tariffs or to other IPPs by NEPRA and are also the norm around the world. Summary of proposed indexations requested is placed at Annexure I

Note: An executive Project Summary is placed at Annexure V for a quick glance of important information.

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Annexures

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ANNEXURE I

Summary of Indexations Requested

Cost Component	Inflation Adjustment	Foreign Exchange Rate Adjustment
1. Operations and Maintenance - Local	Local CPI	-
2. Operations and Maintenance - Foreign	Euro Zone CPI	€ / Rs
3. Return on Equity - Local	Local CPI	-
4. Return on equity - Foreign	US CPI	$ / Rs
5. Debt Service - Local	KIBOR1	-
6. Debt Service – Foreign	LIBOR2	$ / Rs
7. Project Cost – One Time Adjustment	At Financial Close € / Rs	
8. Debt and Equity – ratios and Value	At Financial Close	
9. IDC3 and ROEDC4	Actual at COD5	
10.Insurance Premium	At actuals on yearly basis	

1 KOBOR Karachi Intel-Bank Offer Rate
2 LIBOR London Inter-Bank Offer Rate
3 IDC Interest During Construction
4. ROEDC Return on Equity During Construction
5. COD Commercial Operations Data

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Reference Tariff Table

Dawood Power (Private) Limited
Formerly Win Power (Private) Limited

Total Project Cost US$ 133,140,358
Annual Production kWh 131,662,064

Rs / US$ 61.00

Year	Non-Escalable Component					Escalable Component														Total			
	Loan Repayment	Tariff Rs / kWh	Interest Charges	Tariff Rs./ kWh	Total Rs./ kWh	Fixed O&M Foreign	Tariff Rs./ kWh	Fixed O&M Local	Tariff Rs./ kWh	Variable Cost Foreign	Tariff Rs./ kWh	Variable Cost Local	Tariff Rs./ kWh	Insurance Premium	Tariff Rs / kWh	ROE	Tariff Rs / kWh	With-holding Tax	Tariff Rs./ kWh	Total Rs./ kWh	Pak Rs.	Tariff Rs /kWh	US$	Tariff US Cents/ kWh
																15%		7.50%						
1	409,443,688	3.1098	611,460,858	4.6442	7.7540	32,299,476	0.2453	42,742,709	0.3246	4,946,200	0.0376	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.2763	1,453,654,375	11.0408	23,830,400	18.0997
2	449,601,024	3.4148	571,303,522	4.3392	7.7540	32,299,476	0.2453	42,742,709	0.3246	4,946,200	0.0376	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.2763	1,453,654,375	11.0408	23,830,400	18.0997
3	493,850,416	3.7509	527,054,130	4.0031	7.7540	32,299,476	0.2453	42,742,709	0.3246	4,946,200	0.0376	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.2763	1,453,654,375	11.0408	23,830,400	18.0997
4	542,626,621	4.1214	478,277,925	3.6326	7.7540	32,299,476	0.2453	42,742,709	0.3246	4,946,200	0.0376	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.2763	1,453,654,375	11.0408	23,830,400	18.0997
5	596,412,561	4.5299	424,491,984	3.2241	7.7540	32,299,476	0.2453	42,742,709	0.3246	4,946,200	0.0376	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.2763	1,453,654,375	11.0408	23,830,400	18.0997
6	655,744,882	4.9805	365,159,663	2.7735	7.7540	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	1,471,834,858	11.1789	24,128,440	18.3260
7	721,220,156	5.4778	299,684,390	2.2762	7.7540	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	1,471,834,858	11.1789	24,128,440	18.3260
8	793,501,832	6.0268	227,402,714	1.7272	7.7540	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	1,471,834,858	11.1789	24,128,440	18.3260
9	873,328,028	6.6331	147,576,518	1.1209	7.7540	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	1,471,834,858	11.1789	24,128,440	18.3260
10	961,520,241	7.3029	59,384,305	0.4510	7.7540	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	1,471,834,858	11.1789	24,128,440	18.3260
11		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
12		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
13		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
14		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
15		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
16		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
17		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
18		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
19		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
20		-		-	-	48,043,618	0.3649	42,742,709	0.3246	7,382,540	0.0561	1,386,195	0.0105	52,948,000	0.4022	276,045,206	2.0966	22,382,044	0.1700	3.4144	450,930,312	3.4249	7,392,300	5.6146
Year 1 - 5 Avg		3.7853		3.9686	7.7540		0.2453		0.3246		0.0376		0.0105		0.4022		2.0966		0.1700	3.2763		11.0408		18.0997
Year 6 - 10 Avg		6.0842		1.6697	7.7540		0.3649		0.3246		0.0561		0.0105		0.4022		2.0966		0.1700	3.4144		11.1789		18.3260
Year 11 - 20 Avg		-		-	-		0.3649		0.3246		0.0561		0.0105		0.4022		2.0966		0.1700	3.4144		3.4249		5.6146

Average Tariff (Pk Rps)	7.2674
Average Tariff (US Cents)	11.9137

Discount Rate	10%	
Net Present Value	76.28	125.05
Levelized	8.9598	14.6881

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Dawood Power (Private) Limited

Formerly Win Power (Private) Limited

Assumptions

Capacity per WTG	1.50	MW
Total Number of WTGs	33	
Plant Capacity	49.50	MW
Gross Capacity	18.108	MW
Warranted technical availability production 95%	17.203	MW
Power Curve Correction 5%	0.905	MW
Wake Losses 2.5%	0.453	MW
Electrical Losses 2.5%	0.453	MW
Auxilary Consumption	0.362	MW
Net Electrical Output Delivered	15.030	MW
Net Capacity Factor	30.363%	
Hours per Year	8,760	
Annual Energy Generation	131,662	MWh
Construction Period	1	year
Contract (PPA) Period	20	years
Total Investment Amount	133.140	M US$
Equity 20%	26.628	M US$
Debt 80%	106.512	M US$
Net IRR on Equity	15%	
Interest Rate Foreign (LIBOR + 3%)	8.40%	
Interest Rate Local (KIBOR + 3%)	12.50%	
Operation Cost (Year 1 to 5)	2.202	M US$
Operation Cost (Year 6 to 20)	2.500	M US$
Exchange Rate	61.0	Rs./US $
Unit Investment Cost	2.690	M US$/MW
Levelized Tariff excluding	14.6881	US Cents/KWh

DAWOOD POWER (PRIVATE) LIMITED
Formerly Win Power (Private) Limited

Cash Flow Statement (US$)

Figures in US$ '000

PARTICULARS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cash Inflows																					
Revenue from Operations		23,830	23,830	23,830	23,830	23,830	24,128	24,128	24,128	24,128	24,128	7,392	7,392	7,392	7,392	7,392	7,392	7,392	7,392	7,392	7,392
Equity	26,628																				
Long Term Loan obtained	106,512																				
Total Inflow	133,140	23,830	23,830	23,830	23,830	23,830	24,128	24,128	24,128	24,128	24,128	7,392	7,392	7,392	7,392	7,392	7,392	7,392	7,392	7,392	7,392
Cash Outflows																					
Capital Expenditure	133,140																				
Repayment of Long Term Loan		6,712	7,371	8,096	8,896	9,777	10,750	11,823	13,008	14,317	15,763	-	-	-	-	-	-	-	-	-	-
Interest Cost		10,024	9,366	8,640	7,841	6,959	5,986	4,913	3,728	2,419	974	-	-	-	-	-	-	-	-	-	-
Fixed O & M Costs		1,230	1,230	1,230	1,230	1,230	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488	1,488
Insurance Premium		868	868	868	868	868	868	868	868	868	868	868	868	868	868	868	868	868	868	868	868
Variable O & M Costs		104	104	104	104	104	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144
Total Outflow	133,140	18,938	18,938	18,938	18,938	18,938	19,236	19,236	19,236	19,236	19,236	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Cash surplus for the year	-	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892
Cash & Cash equivalents at beginning of the year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Available for distribution	-	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892
15% Dividend distribution	-	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892	4,892
Cash & Cash equivalents at end of the year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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DAWOOD POWER (PRIVATE) LIMITED
Formerly Win Power (Private) Limited

Cash Flow Statement (Pak Rupees)

Figures in Pak Rs. '000

PARTICULARS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cash Inflows																					
Revenue from Operations		1,453,654	1,453,654	1,453,654	1,453,654	1,453,654	1,471,835	1,471,835	1,471,835	1,471,835	1,471,835	450,930	450,930	450,930	450,930	450,930	450,930	450,930	450,930	450,930	450,930
Equity	1,624,312																				
Long Term Loan obtained	6,497,249																				
Total Inflow	8,121,562	1,453,654	1,453,654	1,453,654	1,453,654	1,453,654	1,471,835	1,471,835	1,471,835	1,471,835	1,471,835	450,930	450,930	450,930	450,930	450,930	450,930	450,930	450,930	450,930	450,930
Cash Outflows																					
Capital Expenditure	8,121,562																				
Repayment of Long Term Loan		409,444	449,601	493,850	542,627	596,413	655,745	721,220	793,502	873,328	961,520	-	-	-	-	-	-	-	-	-	-
Interest Cost		611,461	571,304	527,054	478,278	424,492	365,160	299,684	227,403	147,577	59,384	-	-	-	-	-	-	-	-	-	-
Fixed O & M Costs		75,042	75,042	75,042	75,042	75,042	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786	90,786
Insurance Premium		52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948	52,948
Variable O & M Costs		6,332	6,332	6,332	6,332	6,332	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769	8,769
Total Outflow	8,121,562	1,155,227	1,155,227	1,155,227	1,155,227	1,155,227	1,173,408	1,173,408	1,173,408	1,173,408	1,173,408	152,503	152,503	152,503	152,503	152,503	152,503	152,503	152,503	152,503	152,503
Cash surplus for the year	-	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427
Cash & Cash equivalents at beginning of the year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Available for distribution	-	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427
15% Dividend distribution	-	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427	298,427
Cash & Cash equivalents at end of the year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA AUTHORITY

Dawood Power (Private) Limited

Formerly Win Power (Private) Limited

Project Summary

Rs. 61.00 = US$ 1.00

Introduction

Corporate Status	Private Limited Company
Principal Business	Power Generation
Technology of the Project	Wind Turbine Generators (WTG)
Manufacturer/Model	GOLDWIND, GW 77 - 1.5 MW
Farm Location	Bhambhore, Gharo, Distt Thatta, Sindh
Farm Area	1720 Acres
Buyer	WAPDA / NTDC

figures in '000'

Total Project Cost	US $	PKR	%
EPC Cost	119,933	7,315,913	90.08%
Project Development/Management Cost	3,739	228,079	2.81%
Bank Arrangement Fee etc.	4,656	284,016	3.50%
Interest During Construction	3,602	219,722	2.71%
Other Project Costs	1,210	73,810	0.91%
Total	**133,140**	**8,121,540**	**100.00%**

Funding Structure	US $	PKR	%
Debt	106,512	6,497,232	80.00%
Equity	26,628	1,624,308	20.00%
Total	**133,140**	**8,121,540**	**100.00%**

Equity IRR of the Project		15%
Dividend Payout Per Annum	4,892	298,427 15%
Cost of Debt - Foreign	LIBOR+ 3%	8.40%
Cost of Debt - Local	KIBOR+ 3%	12.50%

Annual Energy Production	Unit	Values
Turbine Size	MW	1.50
Number of Turbines	Nos.	33
Farm Gross Capacity	MW	49.5
Net Capacity Factor	%	30.36%
Net Deliverable Output	GWH	131.662

Tariff and Revenue	US Cents	PKR
Average Tariff	11.9137	7.2674
Levalized Tariff	14.6881	8.9598

figures in '000'

Tariff and Revenue	US $	PKR
Estimated Annual Averge Cash Flows	15,686	956,835