



THE HUB POWER COMPANY LIMITED

Islamic Chamber Building
Block-9, Clifton
P.O. Box 13841, Karachi-75600
Tel: (21) 587 4677-86, Fax (21) 587 0397
Website: http://www.hubpower.com

growth through energy

Ref. No. 017_hnp_nepra/app
10 January 2008

Javed Mahmood
Chief Executive

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

*Received at original
draft
M. Abdul Ghafoor
Reg office*

Dear Sir:

Application for Tariff Approval –
213.6-MW net Capacity at Site Reference Conditions
Reciprocating Engine, Single Fuel/RFO-Fired Power Plant at
Narawal, Punjab Province (the "Project")

Received
By: 4923
Date: 14.1.08

Appended herewith is the Hub Power Company Limited ("HUBCO")'s petition for determination and approval of the generation tariff for the Project pursuant to Rule 3 of the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998, read with paragraph 1.3 of the Guidelines for Determination of Tariff for Independent Power Producers issued by the Government of Pakistan in November 2005 and the applicable provisions of the Government of Pakistan's Policy for Power Generation Projects, 2002.

HUBCO is indeed very pleased to submit the following:

1. The land for the Project has been procured.
2. The EPC price has been fixed.
3. The contractor's commitment to achieve the commercial operations by the date required by the Federal Government.
4. In principle agreement of the Power Purchaser to procure power from the HUBCO Project.
5. The draft Load Flow Study has been issued by the Power Purchaser's planning division.
6. The Environmental Impact Assessment Study (EIA) is being carried out by NESPAK.

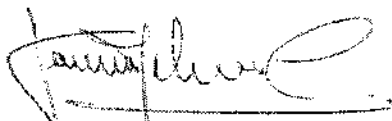
The levelized tariff of PKR 7.7788 kWh (or US \$ 12.7521 per kWh) has been calculated for the Project. The term of the power purchase agreement would be 25 years. The tariff has been calculated in terms of the Federal Government's Policy for Power Generation Projects, 2002 and the guidelines issued thereunder.

We enclose Bank Draft No.374367 dated 08 January 2008 for PKR 2,789,250/- (Pak Rupees Two Million, Seven Hundred Eighty Nine Thousand, Two Hundred and Fifty Only) drawn on Citibank N.A., Islamabad as requisite fee for the Tariff Petition, as notified by NEPRA.

The application for the grant of a generation license shall be filed through a separate application in due course.

We would be grateful if the learned Authority could expeditiously finalize the tariff determination process to enable HUBCO to move ahead with the Project in accordance with the nature of this fast track project. We would be pleased to provide any further information and/or documents that may be required by the learned Authority prior to or during the course of the hearing.

Yours sincerely,



Javed Mahmood
Chief Executive

Enclosure:

1. Bank Draft as above mentioned
2. Hubco's Board Resolution
3. Affidavit of Chief Executive, Hubco.



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Ref. 2921.ah/ra
January 9, 2008

THE HUB POWER COMPANY LIMITED

Certified True Extract from Resolution by Circulation of the Board of Directors of the Company dated November 27, 2007 for filing of Tariff Petition and Generation Licence Petition by Hubco for the Hubco Narowal Project

"UNANIMOUSLY RESOLVED that a Tariff Petition and a Generation License Petition be filed by and on behalf of Hub Power Company Limited with the National Electric Power Regulatory Authority ("NEPRA") for (a) determination and approval of the generation tariff for Hub Power Company Limited's expansion power project i.e. Narowal Project of approximately 225-MW capacity based on reciprocating engine, single fuel/RFO-fired technology (the "Project"), and (b) the grant of a generation license, respectively.

FURTHER UNANIMOUSLY RESOLVED that Mr. Javed Mahmood, Chief Executive of Hub Power Company Limited, be and is hereby authorized to sign all petitions (including review petitions) and documentation, pay all filing fees, appear before NEPRA and provide any information required by NEPRA in respect of the Project, and do all acts and things necessary for the processing, completion and finalization of the aforementioned petitions"

A handwritten signature in black ink, appearing to read "Arshad A. Hashmi".

Arshad A. Hashmi
Company Secretary

9/11/2008

374367

citibank

CITIBANK, N.A. KARACHI, PAKISTAN

DEMAND DRAFT

Karachi, Pakistan

08/01/2008

PAYEES A/C ONLY

3800800326

Pay against this Check

Amount **2,789,250.00**

To NATIONAL ELECTRIC POWER REGULATORY AUTHORITY A/C. THE HUB POWER COMPANY LIMITED.

The Sum of ONLY**

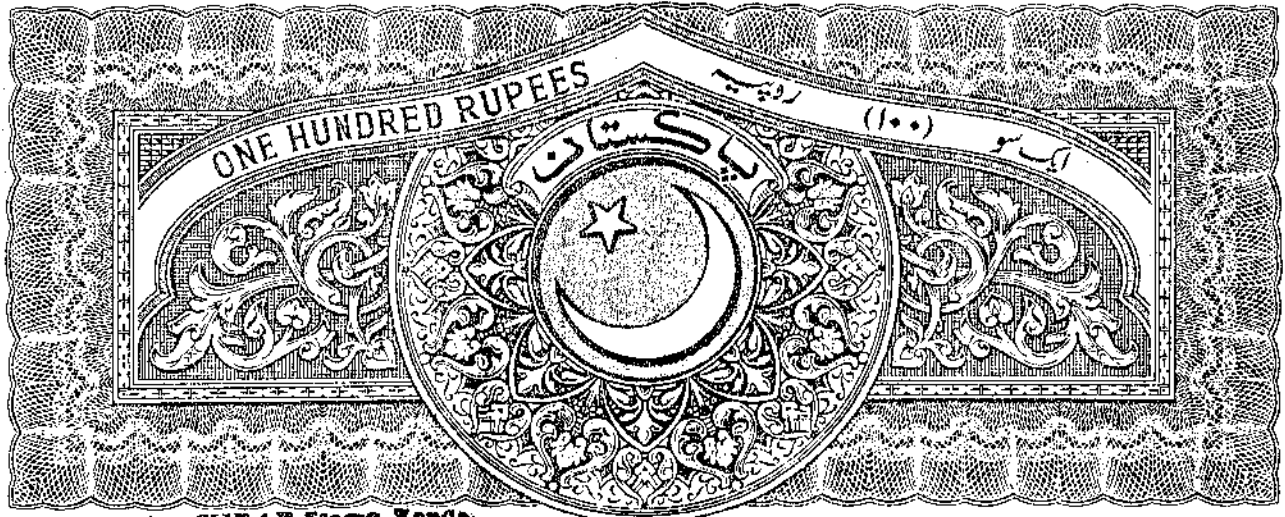
**RUPEES TWO MILLION SEVEN HUNDRED EIGHTY NINE THOUSAND TWO HUNDRED FIFTY

Or Order

Payable at CITIBANK N A
ISLAMABAD
CLEARING DEPARTMENT, ISLAMABAD



SHEHZAD SULTANA



MUHAMMAD ASHRAP Stamp Vendor

Licence. No. 10, Shop # 6, Zaman Centre, Block-7, Federal "B" Area, Karachi 26 JUL 2007

No. 854 Date 26/7/07
Issued to with Address Mr. Javed Mahmood s/o Usman Ali Khan
Through with Address Mr. Javed Mahmood s/o Usman Ali Khan

Purpose: 100/-
Value Rs. 100/- Attached
Stamp Vendor's Signature: [Signature]

BEFORE THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY ("NEPRA")

APPLICATION FOR TARIFF DETERMINATION

AFFIDAVIT of Mr Javed Mahmood s/o Usman Ali Khan, Pakistani National, having CNIC # 42301-5193440-3, Chief Executive of Hub Power Company Limited, having its registered office at c/o Ferguson Associates (Private) Limited, 27 Capital Shopping Centre, 1st Floor, G-11 Markaz, Islamabad.

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

1. I am the Chief Executive and principal authorized representative of Hub Power Company Limited.
2. That I have filed the accompanying Tariff Petition together with supporting documents before the learned Authority, and the contents of the same may kindly be read as an integral part of this affidavit.
3. That the contents of the accompanying Tariff Petition are true and correct to the knowledge and belief of and according to the information received by the Deponent, and that nothing has been concealed.
4. That all further documentation and information to be provided by me in connection with the accompanying Tariff Petition shall be true to the best of my knowledge and belief and according to the information received by the Deponent.

[Signature]
DEPONENT

VERIFICATION

Verified on oath on this 21st day of November [redacted] that the contents of this affidavit are true and correct to the best of my knowledge and belief.

[Signature]
DEPONENT



**BEFORE
THE NATIONAL ELECTRIC
POWER REGULATORY AUTHORITY**

PETITION FOR TARIFF DETERMINATION

**ON BEHALF OF
THE HUB POWER COMPANY LIMITED**

**IN RESPECT OF
A POWER PROJECT OF
220-MW GROSS (APPROXIMATELY)
IN DISTRICT NAROWAL, PUNJAB**

Dated: 10 January 2008

Financial Consultants

Bridgeline Consultants (Pvt.) Ltd.
Rehman Plaza, 4th Floor
Queens Road, Lahore
Tel: (042) 7010312
Fax: (042) 6374363

Legal Consultants

Rizvi, Isa, Afridi & Angell
94-West, Jinnah Avenue
Islamabad
Tel: (051) 111-LAWYER
Fax: (051) 282-3009
www.riialaw.com

TABLE OF CONTENTS

- A. **Particulars of the Petitioner**
- B. **Main Body of the Tariff Petition**
 - 1. Introduction
 - 2. Investment
 - 3. Capital Structure
 - 4. Other Salient Features
 - 5. Tariff Summary
 - 6. General Assumptions
 - 7. Determination Sought
- C. **Annexes to the Tariff Petition**

GLOSSARY

Company/ HUBCO	The Hub Power Company Limited
CC	Construction Contract
CPI	Consumer Price Index
CPP	Capacity Purchase Price
EPCC	Collectively, the ESC and the CC
ESC	Equipment Supply Contract
Euro	The lawful currency of the European Monetary Union
FP _(Rev)	Fuel Price Revised
FP _(Ref)	Fuel Price Reference
IA	Implementation Agreement
IDC	Interest During Construction
IRR	Internal Rate of Return
ISO	International Organization for Standardization
KIBOR	Karachi Inter Bank Offered Rate
Kw	Kilowatt
kWh	Kilowatt hour
LFO	Light Fuel Oil (High Speed Diesel)
LIBOR	London Inter Bank Offered Rate
LOS	Letter of Support
MW	Megawatt
MWh	Megawatt hour
NEPRA/ Authority	National Electric Power Regulatory Authority
NTDC/Power Purchaser	National Transmission and Dispatch Company Limited
O&M	Operation & Maintenance
PKR	Pakistani Rupee
PPA	Power Purchase Agreement
PPIB	Private Power & Infrastructure Board
Project	The Company's proposed 225-MW RFO-fired reciprocating engine technology power project at Narowal near Lahore
RFO	Residual Fuel Oil
ROE	Return on Equity
Ton	Metric Tonne i.e. 1000kg
USD	United States Dollar

B. TARIFF PETITION

1. INTRODUCTION

Legal Regime

- 1.1 Under the Regulation of Generation, Transmission and Distribution of Electric Power Act (Act No. XL) of 1997 (the "**NEPRA Act**"), the Authority is mandated to determine tariffs and other terms and conditions for the supply of electricity through generation, transmission and distribution.
- 1.2 This Tariff Petition is being filed before National Electric Power Regulatory Authority (the "**NEPRA**" or the "**Authority**") pursuant to Rule 3 of the NEPRA (Tariff Standards and Procedure) Rules, 1998, read with paragraph 1.3 of the Guidelines for Determination of Tariff for Independent Power Producers issued by the Government of Pakistan in November 2005 and the applicable provisions of the Government of Pakistan's Policy for Power Generation Projects, 2002 (the "**2002 Power Policy**").

Introduction of The Hub Power Company Limited

- 1.3 The Hub Power Company Limited (the "**Company**" or "**HUBCO**") is a public limited company incorporated and existing under the Companies Ordinance, 1984.
- 1.4 HUBCO is the first and the largest power station financed by the private sector in Southern Asia and one of the largest private power projects in the newly industrialized world. Along with its promoting sponsors (National Power plc, UK and Xenel Industries Limited, Saudi Arabia), HUBCO played an active role in the preparation of offering memorandums for the lenders, arranging and structuring of the long term loans for the project as well as equity offering for the project. HUBCO managed all loan draw-downs, supervised the owner's engineer for timely construction and commissioning of the project.
- 1.5 HUBCO is a committed company engaged in energy sector in Pakistan, supplying approximately 10% of the total power within NTDC domain since 1996-97. HUBCO has an annual turnover of over PKR 44 Billion. HUBCO is one of the largest capitalized companies in the Pakistan stock exchange having one of the highest free-floats. It was the first Pakistani company to issue Global Depository Receipts (GDR) overseas – listed on Luxemburg Stock Exchange.
- 1.6 The size and credibility of HUBCO will make the achievement of financial closing a lot easier and quicker. In fact, HUBCO is already in an advanced stage of finalizing issuance of a mandate letter to the financial institutions, which would enable it to achieve an early and expeditious financial closing.

Project Background

- 1.7 On 12 December 2006, HUBCO submitted its Expression of Interest (the "**EoI**") to the Private Power Infrastructure Board (the "**PPIB**"), Ministry of Water & Power of the Government of Pakistan (the "**GOP**") for its firm interest for setting up of a 210 MW reciprocating engine based residual fuel oil fired power generation facility in the Narowal District (the "**Project**"). A copy of the EoI is attached as **Annex-A** hereto.

- 1.8 In response thereto, the GOP through the PPIB, pursuant to its letter No. 1(102) PPIB-HUBCO/07/PRJ dated 16 May 2007 (a copy of which is appended herewith as **Annex-B**), approved the Project on a 'fast track' basis. Accordingly, the requirements for pre-qualification, issuance of letter of interest and the submission of the feasibility study were dispensed with. The Authority is aware that the required commercial operations date ("**COD**") for the fast track projects has been extended by the Federal Government keeping in view the delivery timelines of the engines manufacturers. The PPIB letter No. 1(102) PPIB-HUBCO/07/PRJ dated 10 July 2007 is appended herewith as **Annex-C**.
- 1.9 The Power Purchaser has agreed to off-take the power generated by the Project, as per its letter No. GM/WPPO/CE1/12499-501 dated 1 November 2006 attached under **Annex-A**.
- 1.10 The plant and equipment will be manufactured and supplied by one of the leading international engine manufacturers, MAN Diesel SE, Germany ("**MAN**"). MAN boasts more than 100 years of experience in the manufacturing and operation of diesel engines. MAN has installed approximately 5,000 four-stroke engines with a cumulative capacity of more than 20,000 MW worldwide. MAN is also doing a number of other power projects in Pakistan.
- 1.11 HUBCO has managed to negotiate and finalize the required COD of 31 March 2010 with MAN. The contract price of Euro 149.5 million has also been agreed with MAN – this is a significant achievement considering the ever-escalating EPC prices worldwide and the fact that same price was agreed to and allowed by NEPRA to another identical project almost 12 months ago. (The agreement with MAN is attached at **Annex-D**.)
- 1.12 The aforesaid achievements have been made possible by HUBCO making substantial advance payment of €7.5 million to MAN out of the sponsors' equity much ahead of the financial close. The Authority would kindly appreciate that HUBCO has taken a major commercial decision/ risk in making the aforesaid advance payment to MAN since the same is non-refundable. This was deemed necessary to secure the required COD and to avoid any contract price escalations.
- 1.13 The tariff, to be determined by the Authority, will be integrated into the Power Purchase Agreement (the "**PPA**") to be entered into between the Company and the Power Purchaser, and shall be based on the format of the standardized PPA proposed by the PPIB.

2. INVESTMENT

2.1 The following investment is estimated in the Project.

Investment / Cost	Million USD
EPCC Cost	191.36
Non EPCC Cost	6.85
Housing Colony Cost	2.00
Land Acquisition & Land Development Cost	3.88
Taxes & Duties	9.75
Development Costs	4.89
Emergency & Safety Spare Parts	2.60
Mobilization & Other Costs	2.65
Start-up Expenses & Utilities	1.29
Pre-COD Insurance Cost	2.58
Financing Fees & Charges	3.89
Interest During Construction	12.60
Total Project Cost	244.34

Item-wise Explanation of the Investment

2.2 EPCC Cost

The EPCC cost is bifurcated and detailed as follows:

2.2.1 The **Equipment Supply Contract (ESC)** price is Euro 135.60 million or USD 173.57 (converted at the reference exchange rate of Euro 1 = USD 1.28). The ESC covers, *inter alia*, the cost of engineering and supply of plant and equipment.

2.2.2 The **Construction Contract (CC)** price is Euro 13.90 million or USD 17.79 million (converted at the reference exchange rate of Euro 1 = USD 1.28).

2.2.3 The above EPCC cost is lump sum cost and includes the cost of 11 diesel engine generating sets with one steam turbine and one 132-kV 2-bay switchyard together with all the necessary auxiliary machinery, equipment and systems including the erection and commissioning of the equipment and construction of buildings. The EPCC price also includes the cost of the fuel tank for 30 days inventory of RFO along with fuel pumping system with all heating and piping arrangements as well as the fire containment area and the fire fighting system. The EPCC price has been fixed following lengthy negotiations between HUBCO and MAN.

2.3 Non EPCC Cost

The non-EPC cost includes the cost of items which are not part of MAN's scope of work pursuant to the EPC contracts. Such costs include the cost of piling of the site, procurement, erection and/or installation of sludge disposal systems, water treatment and softening plant, fence around switchyard, tube wells, emergency generator plus fuel/consumables during construction, vehicles for transportation during construction, fire tender, ambulances and pick-ups and truck weighing machine. Based on the technical input received so far, HUBCO has assumed USD 2.5 million as the cost associated with the piling work.

2.4 **Housing Colony Costs**

The Project site is located approximately 60-km from Sialkot and 120-km from Lahore. It is essential that a housing colony be established at site in view of the long distance from major cities and in order to maintain the safety/ security of key personnel (including expatriates) on site for the maintenance of the plant and the reliability of its operations. Most of the small industries in the area are also following the same practice of keeping key personnel on site.

2.5 **Land Acquisition & Land Development Cost**

It covers the purchase of land, together with stamp duty and registration fees, the fees of the broker and the legal consultants, the cost of backfilling of the site as well as construction of the boundary wall and topographic and geotechnical surveys. The cost under this head includes the construction of 60 ft x 50 ft bridge to cross a feeder canal and also an access metalled road of approximately 500-meters.

2.6 **Taxes & Duties**

It covers custom duties and import taxes of 5% of the cost of plant and equipment under the ESC. The withholding tax of 6% of the CC price has been included. Any duties or taxes in excess thereof (or any new taxes or duties) shall be treated as "pass-through" items to the Power Purchaser.

2.7 **Development Costs**

This cost includes the cost of bankable technical and financial feasibility study, the load flow and short circuit studies, fees of technical, legal (onshore and offshore) and financial consultants, the bank charges for the guarantees to be issued in favour of the PPIB and the Power Purchaser and the fees payable to the PPIB and NEPRA. It also covers the fees and expenses payable to the independent engineer in accordance with the PPA.

2.8 **Emergency & Safety Spare Parts**

It covers the costs of emergency and safety spare parts which are aimed to reduce, as much as possible, the stop times for maintenance of the plant and to ensure the required annual plant availability. These costs are estimated at 1.5% of ESC price and this is consistent with the Authority's ruling in other similar projects.

2.9 **Mobilization & Other Costs**

It covers the expenses of the Company's and the O&M Contractor's personnel prior to COD including HUBCO's offices at Lahore and Narowal (together with the establishment costs), fees for review of design information and technical specifications and risk analysis, offshore negotiations costs, local assistance to O&M Contractor, training of O&M personnel at the manufacturer's factory abroad.

2.10 **Start-up Expenses & Utilities**

It includes costs associated with initial filling of fuel, diesel, chemicals, consumables and lubricants for start-up and testing together with utilities expenses (i.e. electricity, telephone, water).

2.11 Pre-COD Insurance Cost

It covers the cost of insurances of the Complex during the construction phase and up-to the COD. This is estimated at 1.35% of EPCC costs and is in line with the Authority's ruling in other projects.

2.12 Financing Fees & Charges

This includes the up-front fee, the arrangement fee, the L/C charges and the lenders' monitoring fee. These fees and charges are assumed at 2.5% of the debt amount, which will be adjusted at COD as per actual, subject to the maximum of 3% of such debt amount.

2.13 Interest during Construction

It has been calculated (but will be subject to actual adjustment) on the basis of payment schedules in terms of the EPCC keeping in view the equity and debt injections together with the applicable interest/mark up rates. In view of the delivery schedule under the ESC, the Project's implementation period will be 24 months corresponding to 31 March 2010.

3. CAPITAL STRUCTURE

The capital structure of the Project is as follows:

	Million USD
Equity	73.30
Debt	171.04
Total Project Cost	244.34
Debt : Equity Ratio	70:30

4. OTHER SALIENT FEATURES

- 4.1 There is currently no power generation facility in this area. It is expected that most of the generation would be consumed very close to the generation site through the Narowal Grid Station for the development of small and medium size industries and growing demand of electricity in the vicinity. The Power Purchaser plans to take the balance electricity up-to the Kala Shah Kaku Grid Station. The Project would (a) reduce substantial transmission losses, (b) improve the voltage of the area and (c) improve the stability of the grid system.
- 4.2 A range of technologies was reviewed to utilize RFO: conventional steam plant, gas turbines and diesel engines, either in single cycle or combined cycle modes, as well as 4-stroke or 2-stroke engine configurations. A combination of four-stroke diesel engines supplemented with a steam turbine in combined cycle mode was selected for the Project as the primary objective of the plant is to efficiently convert RFO into electrical energy. MAN diesel engines are well proven to use this type of fuel.
- 4.3 After thorough examination of all available technologies and engine manufacturers, it became clear that the plant configuration discussed hereinafter would offer the best and most economical performance to the Power Purchaser. The proposed plant will produce 213.60 MW (net at site reference conditions) in combined cycle mode. The main components of the plant are eleven proven generating sets of type 18V48/60

manufactured by MAN and eleven heat recovery steam generators (HRSG) to provide steam to one condensing steam turbine.

- 4.4 It is assumed that the indicated net output of 213.60 MW (at site reference conditions) is the reference output for the purposes of CPP (Capacity Purchase Price) calculations and adjustment formulas.
- 4.5 Based on the requirement of the Project for full load factor, RFO and LFO will be transported to the site.
- 4.6 The RFO shall be stored in three storage tanks at the site with combined capacity of over 30,000 tons. This storage capacity is for 30 days at full load operation. The RFO from the storage tanks will be transferred into the buffer tank and then moved to the day tank which has a capacity equal to at least 24 hours of full power operation of all the engines. LFO shall be stored in one LFO tank of 1,000 ton capacity.
- 4.7 There is a need for transportation of RFO, lube oil and diesel for plant operation and maintenance. In Pakistan, there are several operational oil marketing companies that are capable of supplying these fuel products. For the purpose of this study, the following companies are being considered as potential suppliers:
- Pakistan State Oil
 - SHELL Pakistan
 - TOTAL (PARCO)
 - Overseas Oil Trading Company
- 4.8 The transportation of RFO and other fuels will be through road transportation under the Fuel Supply Agreement. The road infrastructure from Karachi to the site is sufficient to support our requirements.
- 4.9 The strategic location of the Project provides a unique opportunity for interconnection for power dispersal to Narowal grid and existing 132 kV Kala Shah Kaku Narowal transmission line. No right of way issues are expected.

5. **TARIFF SUMMARY**

- 5.1 The tariff has a typical two-part structure with an EPP for the energy actually dispatched and a CPP based on the available capacity. The energy charge is based on the actual kWh off-take, and consists of the fuel component and the variable O&M component.
- 5.2 The proposed tariff figures appended herein below are the result of a detailed financial analysis. Technical, economical, financial, legal and fiscal aspects have been considered in the evaluation of the Company's financial performance. The levelized tariff is based on a notional 60% plant factor as per the 2002 Power Policy and a 25-years PPA term.
- 5.3 Based on the RFO price of PKR 25,714.50 per metric ton (RFO price including transportation), output of 213.60 MW (net at site conditions) and detailed financial analysis, the following tariff has been established.

	CPP US Cents/kWh at 60% Plant Factor	Energy Charge US Cents/kWh	Total tariff US Cents/kWh	Total tariff PKR /kWh
Levelized tariff	4.0651	8.6871	12.7522	7.7788
Average tariff	3.3288	8.6871	12.0159	7.3297

Average (1-10 years) : US cents 13.6111/kWh (or PKR8.3027/kWh)
Average (11-25 years) : US cents 10.9524 /kWh (or PKR6.6810/kWh)
Average (1-25 years) : US cents 12.0159/kWh (or PKR7.3297/kWh)
Levelized (1-25 years) : US cents 12.7522/kWh (or PKR7.7788/kWh)

The reference generation tariff for the Project is appended herewith at **Annex-E**.

Energy Charges

5.4 The energy charges of the reference generation tariff are based on the actual kWh off-take, and consist of:

- (i) Fuel Cost Component
- (ii) The Local Variable O&M Component
- (iii) The Foreign Variable O&M Component

A summary of the energy price is provided in the table below:

Energy Purchase Price (EPP) PKR/kWh				
Period	Fuel	Variable O&M (Foreign)	Variable O&M (Local)	Total
Years 1-25	4.7811	0.4144	0.1036	5.2991

Fuel Cost Component

5.4.1 This component represents the fuel consumption at a guaranteed efficiency level of 45% at 100% plant load factor. The main assumptions are as follows:

RFO Price:	Rs. 25,714.50 per ton (including transportation cost of PKR 2,350, subject to adjustment as per actual). GST is not included in the RFO Price and shall be pass through to the Power Purchaser at actual.
Thermal efficiency net:	45% (at reference site conditions) at 100% plant load factor.
Output:	213.60 MW (net at reference site conditions)
Heat Rate:	8,000 kJ/kWh at 100% plant capacity factor
Calorific Value	40,792 BTU/kg subject to adjustment at the time of finalization of Fuel Supply Agreement
Partial Loading:	Heat rate curves from MAN to be used for partial load heat rate calculation and payment in case the plant load falls below 100%.

Indexation & Escalation

The Fuel Cost Component shall be adjusted on account of fuel price variation of fuel consumed using FIFO method during operation period and the actual transportation charges and GST. The fuel consumed during testing shall be recovered from the Power Purchaser.

Indexation Formula

The Fuel Cost Component shall be indexed based on the following formula:

$$FC_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (FP_{(Rev)} / FP_{(Ref)})$$

Where:

FC_(Rev)	Revised Fuel Cost Component,
FP_(Rev)	The Fuel Price (Revised) of RFO per metric ton with freight (as per actual) and GST (at actual).
FP_(Ref)	Fuel Price in PKR 25,715 per ton (including transportation cost of PKR 2,350)

Local Variable O&M

5.4.2 This component includes the cost of lubricant consumption, which is directly related to the electricity actually generated. The cost of lube oil for the engines will be indexed to the prevailing Pakistan Wholesale Price Index ("WPI").

Indexation and Escalation

The Local Variable O&M Cost Component of the Energy Purchase Price shall be quarterly indexed to the WPI (manufacturing), as notified by the Pakistan Federal Bureau of Statistics.

Indexation Formula

The Local Variable O&M Cost Component shall be quarterly indexed based on the following formula:

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

Where:

VO&M_(L,Rev)	The revised applicable Local Variable O&M Cost Component of the Energy Purchase Price quarterly indexed to WPI.
WPI_(Rev)	The revised WPI, as notified by the Pakistan Federal Bureau of Statistics.
WPI_(Ref)	The WPI (manufacturing) as on 1 January 2007, notified by the Pakistan Federal Bureau of Statistics.

Foreign Variable O&M

5.4.3 This component primarily includes imported spare parts and consumables to be changed during scheduled maintenance and unscheduled maintenance. Also, it includes chemicals as well as specialized technical services from the manufacturer during maintenance of the plant. The generating sets and associated equipment have manufacturer-recommended overhauling schedules that are commonly based on actual running hours. The actual timing of the major overhaul depends on the actual plant dispatch.

Indexation and Escalation

The Foreign Variable O&M Cost Component of the Energy Purchase Price shall be quarterly indexed to both:

- (a) the USD /PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan; and
- (b) US CPI, as issued by the US Bureau of Labor Statistics.

Indexation Formula

The Foreign Variable O&M Cost Component shall be quarterly indexed based on the following formula:

$$VO\&M_{(F,Rev)} = \text{Relevant Reference Generation Tariff Component} * \left(\frac{USCPI_{(Rev)}}{USCPI_{(Ref)}} \right) * \left(\frac{USD_{(Rev)}}{USD_{(Ref)}} \right)$$

Where:

$VO\&M_{(F,Rev)}$	the revised Foreign variable O&M Component of the EPP, quarterly indexed to US CPI and the USD/PKR exchange rate variation.
$US\ CPI_{(Rev)}$	The revised US CPI, issued by US Bureau of Labor Statistics.
$US\ CPI_{(Ref)}$	The US CPI as on 1 January 2007, as issued by US Bureau of Labor Statistics.
$USD_{(Rev)}$	The revised TT & OD selling rate of USD, as notified by National Bank of Pakistan.
$USD_{(Ref)}$	PKR 61.00

Capacity Purchase Price ("CPP")

- 5.5 The CPP component of the reference generation tariff is payable on the basis of the dependable capacity, established at the COD and periodically thereafter.
- 5.6 This payment is calculated on a basis of 213.6MW capacity (net at reference site condition) and, in order to calculate a levelized unit rate in PKR/kWh, at notional 60% plant factor has also been utilized.

- 5.7 The key assumptions factored in the CPP are the total capital cost of the Project, the debt-equity ratio, the cost of funding and currency thereof, together with the exchange rate. The following assumptions have been used:

Total Project Cost: USD 244.34
 Debt-Equity Ratio: 70:30
 Exchange Rates: 1 USD = 61.0 Rupees; 1 Euro = 1.28 USD

Taxes & Duties

- Customs duties at 5% on imported machinery and equipment as per the 2002 Power Policy.
- Dividend withholding tax of 7.5%.
- Customs duties at 5% on imported spare parts.
- Withholding tax of 6% on CC.
- 0% Corporate Tax Rate.
- 0% Minimum Turnover Tax Rate.

- 5.8 At the time of COD, the tariff figures shall be updated for the various base figures (e.g. fuel price, EPCC price, the O&M and insurance prices, adjusted by actual exchange rates compared to the reference exchange rates (PKR/USD = 61.00, PKR/Euro = 78.08, and USD/Euro = 1.28), and Interest During Construction and financial charges adjusted by prevailing KIBOR, to arrive at the reference generation tariff table to be used in the PPA.

- 5.9 Any modifications or additions required by the Power Purchaser that are not considered in the Project cost shall be treated as pass-through.

- 5.10 The CPP is further broken down into two components as follows.

The Escalable Component

- 5.10.1 This component represents the Fixed O&M Cost, Insurance Cost, Cost of Working Capital, ROEDC, ROE and withholding tax. Since there is no recovery of the original equity capital invested, the plant remains the property of the Company after the 25 year contract period and the Company may operate it as a merchant plant. A summary of the CPP is provided below:

Period	Escalable Capacity Payment (Rs./kWh)						Total
	Fixed O&M	Ins.	Cost of WC	ROEDC	ROE	W/h Tax	
Years 1-25	0.1500	0.0842	0.0945	0.0958	0.3697	0.0349	0.8291

- 5.10.2 The fixed O&M component of the escalable CPP represents the fixed costs of all the staff for O&M, cost associated with periodic maintenance for ensuring availability, plant administration, security, transportation, overheads, office costs, professional fees such as audit, tax and legal, as well as some other fixed operational costs such as environmental monitoring and obsolescence, that do not change with dispatch levels. The fixed O&M cost component has been prepared based on the following breakdown of the local and foreign parts.

Local Fixed O&M Cost Component : 30%
 Foreign Fixed O&M Cost Component : 70%

Indexation & Escalation

The following indexations shall be applicable to the Fixed O&M Cost Component:

- (a) The Local Fixed O&M Cost Component shall be quarterly indexed to the WPI (manufacturing), as notified by the Pakistan Federal Bureau of Statistics; and
- (b) The Foreign Fixed O&M Cost Component shall be quarterly indexed to both:
 - (i) the USD /PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan; and
 - (ii) the US CPI, issued by the US Bureau of Labor Statistics..

Indexation Formula

Local Fixed O&M Cost Component

The Local Fixed O&M Cost Component shall be quarterly indexed based on the following formula:

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

Where:

$FO\&M_{(LRev)}$	The revised Local Fixed O&M Component of the CPP quarterly indexed to WPI (manufacturing).
$WPI_{(Rev)}$	The revised WPI (manufacturing), as notified by the Pakistan Federal Bureau of Statistics.
$WPI_{(Ref)}$	The WPI (manufacturing) as on 1 January 2007. as notified by the Pakistan Federal Bureau of Statistics.

Foreign Fixed O&M Cost Component

The Foreign Fixed O&M Cost Component shall be quarterly indexed based on the following formula:

$$FO\&M_{(FRev)} = \text{Relevant Reference Generation Tariff Component} * (USCPI_{(Rev)} / USCPI_{(Ref)}) * (USD_{(Rev)} / USD_{(Ref)})$$

Where:

FO&M _(FRev)	the revised Foreign Fixed O&M Component of the CPP, quarterly indexed to US CPI and the USD /PKR exchange rate variation.
US CPI _(Rev)	The revised US CPI, issued by US Bureau of Labor Statistics.
US CPI _(Ref)	The US CPI as on 1 January 2007, as issued by US Bureau of Labor Statistics.
USD _(Rev)	The revised TT & OD selling rate of USD, as notified by National Bank of Pakistan.
USD _(Ref)	PKR 61.00

- 5.10.3 The insurance component consists of all-risk insurance/re-insurance for the Project, as well as business-interruption insurance.

Indexation & Escalation

The Insurance Cost Component shall be quarterly indexed based on the following formula:

$$\text{Insurance}_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * \left(\frac{\text{US CPI}_{(Rev)}}{\text{US CPI}_{(Ref)}} * \left(\frac{\text{USD}_{(Rev)}}{\text{USD}_{(Ref)}} \right) \right)$$

Where:

Insurance _(Rev)	The revised Insurance Cost Component of the CPP, quarterly indexed with US CPI and the USD/PKR exchange rate variation.
US CPI _(Rev)	the revised US CPI, issued by US Bureau of Labor Statistics.
US CPI _(Ref)	The US CPI as on 1 January 2007, as issued by US Bureau of Labor Statistics.
USD _(Rev)	The revised TT & OD selling rate of US Dollar, as notified by National Bank of Pakistan.
USD _(Ref)	PKR 61.00

5.10.4 Cost of Working Capital

A working capital loan facility of USD 23.29 million is assumed in order to finance the inventory level of RFO equivalent to 30 days generation at 100% load factor and energy payment at 60% receivable along with GST for 30 days. The cost of Working Capital Facility is assumed at 12.45% (3 month KIBOR (10.45%) + 2% margin) with no other charges (e.g. commitment fee).

Indexation & Escalation

The Cost of Working Capital Component of Escalable Component of the reference generation tariff shall be indexed to the (i) Fuel Price variation; and (ii) the quarterly changes in the 3 month KIBOR.

Indexation Formula

The Cost of Working Capital Component shall be indexed on the following formula:

$$CWC_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (FP_{(Rev)} / FP_{(Ref)}) * (KIBOR_{(Rev)} / KIBOR_{(Ref)})$$

Where:

$CWC_{(Rev)}$	Revised Cost of Working Capital component.
$FP_{(Rev)}$	The new price of RFO per Metric Ton with freight as per the mechanism given in Fuel Cost Component (indexation formula).
$FP_{(Ref)}$	PKR 25,715 per ton (including transportation cost of PKR 2,350, subject to adjustment as per actual).
$KIBOR_{(Rev)}$	The revised 3 month KIBOR rate at the end of each Quarter.
$KIBOR_{(Ref)}$	10.45%

- 5.10.5 The return on equity ("ROE") and return on equity during construction ("ROEDC") components includes a return on invested equity giving an internal rate of return ("IRR") of 15% net after deduction of withholding tax.

Indexation and Escalation

As per the decision of the Economic Coordination Committee, the ROE component of the reference generation tariff shall be quarterly indexed to the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by National Bank of Pakistan; and

Indexation Formula

The ROE and ROEDC component of the Non-Escalable Component of the reference generation tariff shall be indexed using the following formula:

$$ROEDC \& ROE_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (USD_{(Rev)} / USD_{(Ref)})$$

Where:

USD _(Rev)	The revised TT & OD selling rate of US Dollar, as notified by National Bank of Pakistan.
USD _(Ref)	PKR 61.00

Non-Escalable CPP

5.10.6 The following table provides a summary of the non-escalable component:

	Non-Escalable Component (Rs./kWh)		
	Loan Repayment	Interest Charges	Total
Year 1	0.3059	0.6671	0.9730
Year 2	0.3450	0.6280	0.9730
Year 3	0.3891	0.5839	0.9730
Year 4	0.4389	0.5342	0.9730
Year 5	0.4950	0.4781	0.9730
Year 6	0.5582	0.4149	0.9730
Year 7	0.6296	0.3435	0.9730
Year 8	0.7100	0.2630	0.9730
Year 9	0.8008	0.1723	0.9730
Year 10	0.9031	0.0700	0.9730
Year 11-25	0.0000	0.0000	0.0000

5.10.7 It is apparent that there is no charge under this category after 10 years as all the debt would be repaid by the end of the 10th year post COD. The assumptions used in calculation of the above are:

- Amount of Debt: USD 171.04 million (70% of total Project cost).
- Term of debt: 24 months of grace period (construction) + 10 years of quarterly equal debt service after the COD.
- Interest Rates: 3 months KIBOR (9.81%) + Margin (2.4%)
- Currency: PKR.
- The interest charges of the Debt Service Component shall be indexed on the following formula:

Indexation Formula

IC=	Relevant Reference Generation Tariff Component* (KIBOR _(Rev)) / KIBOR _(Ref)
-----	--

Where:

IC	= the variation in interest charges applicable on local loan corresponding to variation in quarterly KIBOR
KIBOR _(Rev)	= the revised 3 month KIBOR rate at the end of each quarter
KIBOR _(Ref)	9.81%

Base Changes

- 5.11 Changes in the base price of fuel (i.e. RFO), freight and GST shall be treated as a pass-through cost based on the guaranteed heat rate.

Pass-Through Items

- 5.12 In addition to the pass-through items stipulated in the standardized PPA, any taxes, duties and levies etc. not factored in the tariff calculation shall be treated as pass-through items in the PPA.

Adjustments at the COD

- 5.13 At the COD, the escalable component and the non-escalable components will be adjusted by the inflation factors and reference exchange rates as defined and described herein.
- 5.14 The non-escalable component shall also be adjusted by the then prevailing 3-month KIBOR.
- 5.15 The final local amount at the COD would be based on actual Euro exchange rates used by the lenders to make payment to the EPC contractors.
- 5.16 No contingency has been included in the Project costs.

6. GENERAL ASSUMPTIONS

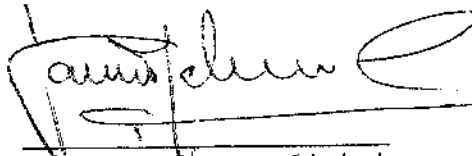
In addition to the other assumptions made in the foregoing paragraphs, the following general assumptions have been taken into account while calculating the tariff. Changes in any of these assumptions will result in a change to the proposed tariff:

- 6.1 Internal consumption (including air-cooled condenser) has been assumed to be approximately 5.55 MW.
- 6.2 Annual plant availability of 88% in terms of the GOP's policy. Scheduled outage allowance of 30 days per engine per annum, except in any year in which a major overhaul is required, the scheduled outage period shall be 60 days per engine. Annual unscheduled outages (MWH) of 500 hours shall be allowed.
- 6.3 NTDC/Power Purchaser shall be responsible for procuring, financing, constructing, operating and maintenance of the interconnection, metering and transmission facilities at Project site.
- 6.4 In case of open cycle mode (including during startups or peaking operation), heat rate and efficiency will be different. Accordingly, energy component of tariff will be adjusted.
- 6.5 All fuels and chemicals, consumables, and associated costs during plant tests after synchronization is assumed to be paid for by the Power Purchaser.
- 6.6 The tariff is calculated on the basis of a notional 60% plant load factor.
- 6.7 A constant ROE is assumed, which results in an IRR of 15% over 25 years.
- 6.8 No hedging cost has been assumed for exchange rate fluctuations during construction.

- 6.9 The cost of working capital has not been included as part of the project cost.
- 6.10 Project contingency/debt service reserves are not included in tariff calculations. If required by lenders, these will be adjusted accordingly in the tariff.
- 6.11 The 5% of the customs duties have been assumed for reference purposes, any change therein would be pass-through. No other tax including any Federal Excise Duty on the import of plant and equipment is assumed. It is assumed that no part of the power plant and the associated equipment supplied under the ESC will be treated as locally manufactured.
- 6.12 Tax on any income of the Company including sales proceeds from NTDC, general sales tax and all other corporate taxes will be treated as pass-through items.
- 6.13 No withholding tax on supply of plant and equipment assumed. Only 6% withholding tax on onshore construction services and works assumed.
- 6.14 Withholding tax on dividends (currently at 7.5%) as required to be deducted under the Income Tax Ordinance, 2001 or any other law for the time being in force at the time of such payment is considered as pass-through.
- 6.15 100% local debt is assumed.
- 6.16 No LC confirmation charges have been assumed. If applicable, the adjustment based on actual, up-to- a maximum of 3%, shall be treated as pass-through to the Power Purchaser.
- 6.17 The tariff table shall be further updated at COD in order to adjust the tariff according to the actual KIBOR and exchange rates (PKR/USD, PKR/ Euro and USD/ Euro) and other re-openers.
- 6.18 All invoicing and payment terms are assumed to be in accordance with the 2006 standardized PPA.
- 6.19 If Power Purchaser requires the dispatched delivery to be made in excess of that to the existing 132kv Narowal Badomali Transmission line or to any other additional circuit, the additional cost incurred by the Company will be paid by the Power Purchaser.
- 6.20 The cost of metering system (except back up meter) and remote terminal unit (RTU) to be by the Power Purchaser in case HUBCO is required to meet this cost, it would be claimed under the non EPC Cost.
- 6.21 All other assumptions not expressly stated herein are based upon the 2006 standardized PPA. Consequently any change in any such assumption may lead to change in the tariff.
- 6.22 Any incentives given to any other project of the same technology shall also be given to HUBCO.

7. **DETERMINATION SOUGHT**

- 7.1 In light of the foregoing submissions, the learned Authority is kindly requested to approve the Company's generation tariff together with the pertinent indexations to remain effective for a period of 25 years from the COD.
- 7.2 The Company would be pleased to provide any further information, clarification or explanation that may be required by the Authority during its evaluation process.



Hub Power Company Limited
Through Javed Mahmood
Chief Executive

Dated: 10 January 2008

REFERENCE GENERATION TARIFF

Year	Variable Charge (Rs./kWh)			Capacity Charge (Rs./kWh)									Capacity	Total	
	Fuel	Variable O&M	Total	Fixed O&M	Cost of Working Capital	Insurance	ROI	ROEDC	Withholding Tax @ 7.5%	Loan Repayment	Interest Charges	Total	Rs. per kWh	Rs. per kWh	Rs. per kWh
1	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.3859	0.6674	1.8022	3.0036	8.3027	13.6111
2	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.3150	0.6280	1.8022	3.0036	8.3027	13.6111
3	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.3891	0.5839	1.8022	3.0036	8.3027	13.6111
4	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.4389	0.5342	1.8022	3.0036	8.3027	13.6111
5	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.4950	0.4781	1.8022	3.0036	8.3027	13.6111
6	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.5582	0.4149	1.8022	3.0036	8.3027	13.6111
7	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.6296	0.3435	1.8022	3.0036	8.3027	13.6111
8	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.7100	0.2630	1.8022	3.0036	8.3027	13.6111
9	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.8008	0.1723	1.8022	3.0036	8.3027	13.6111
10	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.9031	0.0700	1.8022	3.0036	8.3027	13.6111
11	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
12	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
13	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
14	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
15	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
16	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
17	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
18	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
19	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
20	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
21	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
22	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
23	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
24	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
25	4.7811	0.5180	5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349			0.8291	1.3819	6.6810	10.9524
Levelized Tariff (1-25 Year)			5.2991	0.1500	0.0945	0.0842	0.3697	0.0958	0.0349	0.3437	0.3150	1.4878	2.4797	7.7788	12.7521