BEFORE
THE NATIONAL ELECTRIC
POWER REGULATORY AUTHORITY

PETITION FOR TARIFF DETERMINATION

ON BEHALF OF
JDW POWER (PRIVATE) LIMITED

IN RESPECT OF
APPROXIMATELY 80 MW COGENERATION POWER PROJECT
NEAR RAHIM YAR KHAN

Dated: 22 December 2009

Technical Consultants

Avant-Garde Engineers And Consultants (Private) Limited
68a, Porur Kundrathur High Road, Porur
Chennai-600 116, India
Tel+91-44-24828717-20
Fax+ 91-44-24828531
Email: avantgarde@vsnl.com
Web: www.avantgarde-india.com

Financial Consultants
Crosby Securities Pakistan
37-A, Block C-1, Gulberg III, Lahore
Tel: (042) 5871251-3
Fax: (042) 5871250
Email: usman.haider@crosby.com

Legal Consultants

Rizvi, Isa, Afridi & Angell
54-II, Block E-1, Gulberg III
Lahore
Tel: 042-111-LAWYER
Fax: 042-3576-4196
Email: hnaqvee@riaalaw.com
Web: www.riaalaw.com

TABLE OF CONTENTS

A. **Particulars of the Petitioner**

B. **Main Body of the Tariff Petition**

1. Background
2. Project Profile
3. Project Financials
4. Tariff Summary
5. Adjustment post finalization of the EPCC
6. General Assumptions
7. Determination Sought

C. **Annexes to the Tariff Petition**

A. Tariff Table – Weighted Average Fuel Cost
B. Tariff Table Bagasse Fuel During Crushing Season
C. Tariff Table– Bagasse Fuel During Off-Season
D. Tariff Table– Coal
E. Local Debt Repayment Schedule
F. Foreign Debt Repayment Schedule
G. Letter from PPIB to proceed to NEPRA
H. Letter to PEPA for EIA submission
I. Technical Consultant's (Avant Garde) Profile
J. Copy of pay order for NEPRA fee

GLOSSARY

2002 Power Policy	The GOP's Policy for Power Generation Project, 2002
Company/Petitioner	JDW Power (Private) Limited
COD	Commercial Operations Date
CPI	Consumer Price Index
CC	Capacity Charge
Co-Gen Policy	The GOP's National Policy for Power Co-Generation by Sugar Industry and Guidelines for Investors, 2008
CSA	Coal Supply Agreement
EC	Energy Charge
ECC	Economic Coordination Council of the GOP
EPCC	Equipment, Procurement & Construction Contract
EPC Contractor	One or more contractors to be appointed by the Petitioner to carry out the works relating to, *inter alia*, engineering, procurement and construction of the Project.
IDC	Interest During Construction
IRR	Internal Rate of Return
IPP	Independent Power Provider
KIBOR	Karachi Inter Bank Offered Rate
Km	Kilometer
Kw	Kilowatt
KWh	Kilowatt hour
LIBOR	London Inter Bank Offered Rate
LOS	Letter of Support
MW	Megawatt
MWh	Megawatt hour
NEPRA/ Authority	National Electric Power Regulatory Authority
NEPRA Act	The Regulation of Generation, Transmission and Distribution of Electric Power Act (Act No. XL) of 1997
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 80-MW bagasse and imported coal based co-generation power project
ROE	Return on Equity
ROEDC	Return on Equity during Construction
Sponsor Company	JDW Sugar Mills Limited
Ton	Metric Tonne i.e. 1000kg
USD	United States Dollar

A. PARTICULARS OF PETITIONER

JDW Power (Private) Limited
1485/C, A2 – Asad Jan Road
Lahore Cantt, Pakistan
Dir: + 92 42 36687823
Fax: +92 42 36687825

Representatives of the Company

Rana Naseem Ahmad
Project Leader

Mr Asadullah Khan
Project Manager

Mr Hammad Rabbani
Project Finance and Commercial Manager

B. TARIFF PETITION

1. BACKGROUND

1.1 Introduction of JDW Sugar Mills Limited (the Sponsor Company) and the Group

1.1.1 The Sponsor Company was incorporated on 31 May 1990 as a private limited company and was converted into a public limited company on 24 August 1991. The principal activity of the Company is production and sale of refined sugar.

1.1.2 The Sponsor Company is part of JDW Group (the Group) which is the main sponsor of the Project. The Sponsor Company is listed on the Karachi and Lahore Stock Exchanges.

1.1.3 The Group owns three sugar mills in Pakistan with a combined sugarcane crushing capacity of 38,000 ton per day (TCD) which makes it the largest group in the sugar industry of Pakistan. The Sponsor Company – the intended fuel supplier to the Project – has a capacity of 20,000 TCD, Ghotki Sugar Mills 10,000 TCD and United Sugar Mills 8,000 TCD. Sugar recovery percentage of the Group is highest amongst the entire industry at 11.21%, compared to industry average at 9.46% in the year 2008-09.

1.1.4 The Group intends to develop an 80-MW Co-generation Power Project (the Project). The Project will be located adjacent to the Sponsor Company near Rahim-Yar-Khan and will utilize bagasse produced by the Sponsor Company.

1.1.5 The Sponsor Company plans to setup the Project through a private limited company incorporated under the laws of Pakistan, i.e. JDW Power (Private) Limited (the Company or the Petitioner).

1.1.6 The Group intends to contribute towards the power industry through implementation of the Project to be followed by other viable projects. Furthermore, the Group envisages investment in the co-gen IPP business as a natural extension of its core business. The group intends to extend its co-gen capabilities and capacities by installing highly efficient, economical and hi-tech co-gen power plants at its existing three Sugar Mills one by one

1.2 Initial steps towards the Project development

1.2.1 In line with the provisions of the GOP's Co-Gen Policy, the Project has been registered with the GOP/PPIB pursuant to the PPIB's letter No.1 (103) PPIB-1058/09/PRJ dated 19 October 2009.

1.2.2 The Initial Environment Study has already been carried out. The Petitioner has hired Messrs Etech Environmental Consultants to obtain the requisite

environmental approval from the relevant authority, i.e. the Environmental Protection Agency, Punjab.

1.3 Legal Regime

1.3.1 Under 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.

1.3.2 This Petition is being filed before the Authority pursuant to Rule 3 of the NEPRA (Tariff Standards and Procedure) Rules, 1998, read with paragraph 1.3 of the Tariff Guidelines and the applicable provisions of the GOP's Co-Gen Policy and the 2002 Power Policy.

2. PROJECT PROFILE

2.1 Project Rationale

2.1.1 The distinct features of the Project are encapsulated below

- ***Economical tariff*** – The Project is based on bagasse, which is a by-product of sugarcane, which when combined with coal will provide one of the most economical sources of electricity generation in Pakistan

		*RFO	JDW Project
Levelized tariff	c/kWh	15.66	9.900
Energy Charge	c/kWh	10.31	4.544

**Grange Power Tariff Adjusted at current parameters*

- ***Fuel Diversity & Optimal Availability*** – The Project is conceived as a means to balance the energy mix in Pakistan and as a solution to reduce the reliance on imported oil and thereby address the prevailing growing deficit of electricity in Pakistan.

  The plant will burn bagasse and cane trash for a considerable period during a year (approximately 60%) and coal for the rest of the year. In this manner the plant will remain available throughout the year. Moreover, the Project aims to ensure maximum operating days on indigenous fuel and minimize the use of coal. However, to ensure maximum productivity it also aims to ensure ample coal stock for non crushing season to enhance plant availability and reliability.

- ***Capacity availability during low hydel and gas shortage (winter) months*** – This Project will help overcome the shortage of electricity in the winter months which is due to low waters and or gas shortage rather than capacity constraints.

- *Synergy:* Co-generation technology will be introduced in Pakistan which will have a long term effect on the power generation industry.

- *Scale* – As mentioned above, the Sponsor Company – the intended fuel supplier to the IPP – has a capacity of 20,000 TCD, being amongst the largest sugar mills in Pakistan. The Project will be amongst the pioneering co-gen power projects in the country.

- *Technology* – The Project will use high pressure boilers and 40MW x 2 steam turbines to generate electricity for sale to the national grid.

- *Social and Environmental Effects* – Bagasse based co-gen power production is amongst the most environmental-friendly methods of producing electricity. It reduces dependency on fossil fuels for electricity production. Additionally, it curtails harmful CO^2 emissions and utilizes bagasse which would otherwise typically be used for steam and electricity for in-house utilization at much less efficiency.

- *Reduced Line losses:* The Project will reduce line losses due to proximity to load centre.

- *Fuel Cost Savings:* When compared with alternate RFO-plants at 45% efficiency, the Project will result in fuel cost saving to the off-taker approximately US$ 24 million per annum and approximately US$ 730 million over the Project life of 30 years.

- *Foreign Exchange Savings:* The use of bagasse as against imported RFO would translate into a much needed foreign exchange saving of approximately US$ 1 billion over the Project life.

- *Self-reliance:* Fuel is basic ingredient of economic growth. The Project will decrease reliance on fuel imports and help Pakistan attain self-reliance in fuel availability.

- *Jobs creation:* The Project has potential to create substantial jobs (in power and associated industries) in remote areas – this will improve the standard of living in these areas.

- *Economic Development:* The additional benefit of encouraging local investment is that that return on investment remains within the country which has positive trickle down impact on economy and society

2.2 Plant Location

The Sponsor Company is located at Qasba Shiren, Jamaldin Wali, District Rahim Yar Khan. The proposed power plant will be installed on approximately 50 acres land, to be procured, adjacent to the sugar mills.

2.3 Current Technology and the Proposed Technology plus Unit Size

The Sponsor Company currently owns six power generating unites producing approximately 28 MW of electricity using low pressure boilers (23 bar 340°C) and small back pressure turbines. With the installation of the proposed power plant, the existing power generators will be discarded.

The proposed plant of the Petitioner will consist of the state of the art, most updated co-gen technology with proven track record. The technology selected is well-tested in Reunion Island, India, Mauritius and Kenya (commissioned in May 2009.

Based on the Feasibility, the recommended unit size for the Project on a total plant capacity of approximately 80 MW will be achieved by installing 2 x 40 MW condensing and extraction steam turbines plus 2 x 210 TPH high temperature and high pressure boilers.

The Petitioner has selected the latest technology. As the gasification of bagasse has still not attained full-scale commercial exploitation, the only best technology available for using the bagasse is through the direct combustion route. The technology chosen is the conventional thermal power plant technology based on the Rankine Cycle. The bagasse will be combusted in a high pressure boiler and the steam generated will be fed to the steam turbine to generate power. The turbine will be different from the conventional thermal power plants as the turbine will be provided with a controlled extraction for extracting the process steam required for the sugar mill. To enhance the efficiency of operation, regenerative heaters are used in the feed water circuit. In relation to the Petitioner's Project, the cogeneration cycle is based on the parameters of 110 bar(a) and 540°C at the boiler outlet, currently being used in many countries for the cogeneration projects.

The cycle chosen with the above parameters is the latest used in any of the bagasse fired installations around the world. These above selected parameters make the cycle more efficient and help in the generation of more units for the same quantum of the fuel. There are already a few cogeneration plants operating in India with these parameters and the operating experience of those plants, in synchronization with the sugar mill operation, has been smooth and without any hitch. The cogeneration scheme for the Petitioner's Project proposes 2x210 TPH capacity boilers and 2x40 MW extraction condensing turbogenerators. Considering the off-season operation of the plant, the cogeneration power plant

boilers are designed for firing bagasse and coal. The boiler will also be suitable for firing some amount of cane trash along with bagasse.

The Petitioner submits that the unit size will ensure flexibility in operation, increase in reliability and maintenance flexibility.

We are pleased to submit that the plant configuration and sizing will facilitate longer operation on bagasse, low life cycle cost to the consumer, least construction time, environmentally benign operation and will meet the grid requirements.

2.4 Overall Plant and Energy Balance

Each unit will be designed, manufactured, installed and commissioned per internationally accepted practices and standards. The plant's estimated key performance data and energy balance is set out below:

Approximate auxiliary load per unit	3.8MW
Net heat rate (weighted average)	12,979
Plant net efficiency (weighted average)	26.83%
Design coal HHV (gross as received)	6500 kcal/kg
Annual coal consumption	131,000 tons approx
Annual bagasse consumption	508,000 tons approx

The numbers relating to plant gross capacity, auxiliary load and efficiency will be adjusted in accordance with the engineering, procurement and construction contract (EPCC) to be executed between the Company and the EPC Contractor. The high voltage electrical interconnection of the Project to the existing transmission system will be the responsibility of the Power Purchaser and will be at the voltage level of 132kV.

It is pertinent to mention here that the bagasse-based co-generation has an intrinsic low efficiency due to smaller unit size, travelling grate fuel firing system, stroker-boiler instead of PC boiler owing to bagasse, steam turbine operation in condensing as well as extracting mode.

Co-gen plant efficiency is measured as an overall co-gen cyclic efficiency all around the world including USA, Europe and India and electric efficiency is one of its indicators.

The prescribed efficiency for the Petitioner's Project is most efficient and maximum achievable till to date. Although there are some higher operating parameters, known as future technology, which are under research and development phase they are still not tested and proven yet. For example, a bagasse fired boiler for operating at higher temperature of 550-560 C and pressure of 120-125 bars is under consideration and evaluation process with the Petitioner's

technical consultant but its successful trial run still requires lot of studies and research and maturity of this model will require lot of time. Therefore, the given efficiencies in the Petitioner's case are the most modern, highest and proven till date in bagasse based co-gen technology.

As bagasse based co-gen plant is different in technology, operational cycle, fuel limitations, fuel firing system constraints so its efficiency should not be compared with a CCGT or a conventional coal fired plant. Be that as it may, the Petitioner's power plant is the most efficient and competitive.

2.5 Secondary Fuel and/or Backup Fuel

The use of bagasse with coal for the Project will mean the Petitioner will rely on a well-tested fuel mix. The plant will use bagasse as primary fuel during the crushing season and to the extent saved bagasse is available during off season. Coal will be used in the non-crushing season as a secondary fuel.

2.6 Plant Commissioning, Operating and Maintenance Philosophies

Operation and maintenance philosophy for the power plant will be to maximize safety, maintain high efficiency and minimize costs in that order. The O&M contract will be finalized in due course following finalization of the EPCC.

2.7 Coal Sources and Potential Coal Suppliers

The Project will use coal as secondary fuel. Coal is a widely traded commodity and its pricing is regulated through renowned coal indices Steam coal trade is essentially divided into two regional markets:

- the Atlantic market, made up of importing countries in Western Europe, notably the UK, Germany and Spain.
- the Pacific market, which consists of the developing and OECD Asian importers, notably Japan, Korea and Chinese Taipei.

The Pacific market currently accounts for about 57% of world seaborne steam coal trade.

Pakistan's coastal line comes under the Pacific region. Its geographical location gives an advantage for importing coal from three large coal exporters i.e. Australia, Indonesia and South Africa. These three countries capture around 62% of the world's hard coal trade.

Top Coal Exporters (2008e)

Australia	252Mt	115Mt	137Mt
Indonesia	203Mt	173Mt	30Mt
Russia	101Mt	86Mt	15Mt
Colombia	74Mt	74Mt	-
USA	74Mt	35Mt	39Mt
South Africa	62Mt	61Mt	1Mt
PR China	47Mt	43Mt	4Mt

Top Coal Importers (2008e)

Japan	186Mt	128Mt	58Mt
Korea	100Mt	76Mt	24Mt
Chinese Taipei	66Mt	60Mt	6Mt
India	60Mt	31Mt	29Mt
Germany	46Mt	37Mt	9Mt
PR China	46Mt	35Mt	11Mt
UK	44Mt	37Mt	7Mt

Indonesia and Australia cover comparatively the larger part of coal supply in the region. South Africa, although the 2nd nearest port to Pakistan coastal line, has demand pressures from the Pacific as well as Atlantic regions. The Project will procure coal from all of these three sources in following priority:

1. Indonesia
2. South Africa
3. Australia

Coal will be procured with a combination of small to medium term coal supply agreements. This will enable the Petitioner to take advantage of the good bargains that may be available at times. Usually coal suppliers ask for a firm tonnage commitment – a reasonable part of the contract quantity – in order to ensure reliable supply through back to back mining asset management contracts. In Petitioner's case, the amount of coal required by the Project is very small hence the Project may not be able to influence coal suppliers beyond a certain extent. The firm quantity and other material terms will be finalized in consultation the Power Purchaser following negotiations with the coal suppliers.

Below is a list of major coal suppliers covering major part of the coal exports from Indonesia, Australia and South Africa:

- BHP Billiton
- P T Kideco

- Xstrata
- Berau Coal
- Adaro Coal
- Kaltim Prima Coal
- Banpu.

The majority of coal supply to the Project is expected to come from one or more of these potential suppliers. The Project development team consists of a resource who was responsible for coal supply matters forming part of the feasibility study of a large imported coal project in Pakistan. The Petitioner intends to hire an international coal advisor in due course to procure secure coal supply arrangements at most competitive terms.

2.8 Coal Procurement Strategies

Coal is expected to be procured using varying term contracts from one or more sources with a view to ensure reliability of supplies and competitiveness of the delivered prices. To the extent technically and commercially viable, the Petitioner will use or explore the possibility of using local coal.

The petitioner is already in touch with the Baluchistan and the Punjab Ministries of Coal and Mining. Although local coal contains higher sulfur content, the Petitioner will further explore viability of local coal utilization. In case of local coal utilization, any cost associated with the capital, operation and environmental matters will be treated as pass-through.

2.9 Renewability of CSA

Imported coal-based power projects obtain coal through short to medium term contracts. The short to medium termed contracts also give flexibility to the power producer of effectively managing coal supply and associated risks through diversified portfolio of reputable international coal suppliers. Furthermore, the Petitioner and the off-taker will have the benefit of revisiting the minimum take-or-pay quantity keeping in view the coal market conditions and the electricity demand/supply of electricity in Pakistan. The Petitioner will enter into a number of CSAs during the Project life which will be renewed through a transparent manner as per international best practices and consistent with the terms of the PPA.

2.10 Coal Price Adjustment Mechanism

Global coal trade is regulated through various liquid coal indices. These indices are published regularly by international companies and followed worldwide. The indices are based on actual transactions in the market and form benchmark for different short to medium term coal contracts. The Petitioner proposes API 4 (Richards Bay) (50%) index, which covers FOB coal supply from Richards Bay, South Africa, and Global Coal Newcastle (50%), which covers FOB coal exports

from Australia to be used for indexation/price adjustment of the coal price. Indonesia is relatively a newer exporter therefore it does not have an internationally recognized coal index. Most of the Indonesian coal supply contracts follow Global Coal and other Australian coal indices. Both these indices are most commonly used and are a transparent indication of price adjustments.

3. FINANCING/EPCC PLAN

The Project is going to be funded typically by a combination of debt and equity. Debt is expected to form 80% of the total Project cost and the remaining funds will be invested through equity contributions by the Group. In case the financiers/ banks require a higher percentage of equity contribution, the tariff will be adjusted accordingly. The Petitioner requests the Authority to allow this flexibility in its tariff ruling to avoid the need to get back to the Authority for a fairly straightforward adjustment on account of higher equity contribution.

The Group is already in contact with multilateral financing institutions and local banks to attract their interest in providing finance for the Project. The Petitioner is also exploring the possibility of getting an Export Credit for the Project.

In today's market conditions, financial institutions have become very selective. The global economic meltdown and the resulting liquidity crisis worldwide has adversely affected and in some cases even failed projects. In the current financial market, banks wait for the projects to mature. In light thereof, we have deferred our efforts to procure potential lenders' interest for financing until first stage tariff is determined by the Authority. The first tier tariff will reflect regulator's faith in the Project and will generate fair amount of excitement among potential financiers and the EPC contractors. The Petitioner is confident that the EPC price obtained via competitive bidding process following issuance of first tier tariff will result in most competitive tariff for the power purchaser.

4. CONSTRUCTION SCHEDULE

The Project is expected to achieve Financial Close by Q1 2011 and Commercial Operations Date by Q1-2013, i.e. within 36 months from the issuance of the LOS in line with the provisions of the Co-Gen Policy.

5. PROJECT FINANCIALS

5.1 Capital Structure

The capital structure of the Project is outlined as follows:

	Million (USD)
Equity	24.7
Debt	98.8

Project Cost	123.5
Debt : Equity Ratio	80:20

5.2 Project Cost

The breakup of the Project Cost is summarized as follows:

Description	USD-MM
EPC Cost	95.0
Land & Land Development Costs	1.5
O&M Mobilization Advance	1.0
Development Cost	5.8
Fuel during Testing	0.9
Non EPC Costs	2.5
Custom Duties (6% on 70% of EPCC)	4.0
Lenders' Fees & Charges (3% of Debt)	3
Insurance (1.35% of EPC)	1.3
Project Cost (before IDC)	**114.9**
Interest during construction	8.6
Total Project Cost	**123.5**

5.3 EPC Costs

We submit that bagasse and coal mix cogeneration projects are granted a waiver from "firm Engineering, Procurement and Construction (EPC) Contract Requirement", *vide* ECC decision case ref: ECC-47/07/2009 dated: 19-3-2009.

For the purposes of this Petition, the Company has at this stage relied upon budgetary proposal for turnkey EPC price of the power plant.

(a) The EPC cost is a lump sum cost and includes the cost of power plant together with all the necessary auxiliary machinery, equipment and systems including the erection and commissioning of the equipment and construction of buildings.

(b) The Company will be able to provide the firm EPC Price soon after the finalization of the EPCC. Based thereon, the Company will request the Authority to adjust the Tariff Ruling.

The EPC costs include the cost associated with the black-start facility of 2x2MW. This facility will enable the power plant to start operations even when the grid system is down or when it requires the power plant to provide electricity to bring the system back in case of a blackout.

5.4 Land and Land Development Costs

The cost under this head mainly covers the purchase of land together with stamp duty, registration fees, broker fee, cost to fill and level the site and construction of access road and boundary walls.

5.5 O&M Mobilization Cost

Mobilization costs comprise the expenses of the O&M contractor's personnel (both local and expatriates) and costs associated with the training of the Petitioner's personnel during the construction phase leading up-to the COD.

5.6 Development Costs

The Project will require a team of experts and consultants for its structure and development.

The development costs include costs incurred so far and to be incurred till Financial Close of the Project. These primarily consist of the cost of feasibility study, feasibility study review, environmental studies, load flow and short circuit study, soil investigation, hydrological, geological, bid evaluations, owner's engineer, independent engineer, coal advisors, legal counsels including the Petitioner's legal counsel and the financial advisor, bank charges on the bank guarantees to be issued to the PPIB and the Power Purchaser, NEPRA, SECP and other regulatory fees, sponsors' development costs and administration charges and overheads for construction period.

5.7 Non-Reimbursable Fuel During Testing Costs

These are the costs which are not under the scope of the EPC Contractor and consist of cost of fuel required for commissioning of the power plant. The current fuel prices are assumed for this purpose, however, an adjustment will be made at the time of COD with respect to the then-prevailing fuel prices and actual electricity cost.

5.8 Non EPC Costs

This head covers the cost of items which are typically excluded by the EPC contractor and are picked by the owner/IPP. It mainly comprises admin & office buildings, residential colonies and procurement of telecommunications system, water & power connections and office and electric equipments.

5.9 Customs Duties

The Petitioner has assumed taxes, import duties and any other levies of whatsoever nature in respect of the EPCC arrangement @ 6% applicable on 70%

of the EPC cost. Any imposition of or change in duties, levies or taxes of whatsoever nature will be incorporated and adjusted in the Project cost at the COD.

During selection process of the EPC Contractor, the Company will make good faith efforts to require the EPC Contractor to incorporate as much locally produced material, equipment, and supplies as possible for the design, construction, completion, operation and maintenance of the power complex. The Company respectfully submits that the nature of the EPCC arrangement is such that EPC Contractors generally do not warranty the performance of a power plant where certain components thereof are purchased from sources other than the EPC Contractor. Power plants are typically designed and constructed as a "package deal". In light thereof, if the customs authorities impose customs duties or import taxes in excess of the number assumed in this Petition on account of certain equipment being treated by the customs authorities as the one which is "locally manufactured" then such excess customs duties and or import taxes (of whatsoever nature) will be adjusted in the Project cost on or about the COD.

5.10 Construction Insurance Cost

This head covers the cost of insurances of the Complex during the construction phase. Total insurance cost is assumed 1.35% of the EPC cost. The estimate is in line with earlier determination by NEPRA. The insurance costs will be adjusted upon finalization of the EPCC.

5.11 Lenders Fees & Charges

This includes the lenders' Front-end Fee and the Commitment Fee and the fees of the for the lenders' advisors. These fees and charges are assumed at 3% of the debt amount, which will be adjusted at COD as per actual.

5.12 Interest During Construction

It has been calculated (but will be subject to actual adjustment) on the basis of assumed payment schedules keeping in view the equity and debt injections together with the applicable interest/mark up rates. IDC will be subject to adjustment at the EPC stage based on the EPC contract and at COD on the basis of actual drawdown of loans. The Petitioner has assumed 50% local (KIBOR based) and 50% offshore/ foreign debt (based on LIBOR).

6. TARIFF SUMMARY

The tariff has a typical two-part structure with an Energy Charge (EC) for the energy actually dispatched and a Capacity Charge (CC) based on the available capacity. The CC will cover Debt servicing, Return on Equity, Return on Equity during Construction, Fixed O&M, Insurance and Working Capital Financial Charges. Whereas the EC will cover fuel cost (bagasse and coal), coal

transportation cost and Variable O&M. The prices of coal will be indexed using a robust indexation mechanism based on internationally traded indices. Transportation cost will be pass-through on actual basis.

The two-part tariff structure used since 1994 for the IPPs has enabled the grid owner and or off-taker to get reliable power from the private power producers. The Petitioner also seeks to provide reliable electricity to the off-taker at competitive rates.

The proposed tariff figures are as follows:

	CC*	EC	Total Tariff	
	Cents/kWh	Cents/kWh	Cents/kWh	PKR/kWh
Levelized Tariff	5.336	4.544	9.900	7.920
Average Tariff	4.028	4.544	8.572	6.858

**CC is calculated at 60% plant factor*
**PKR/USD = 80*

The reference generation tariff table for the Project is appended herewith as **Annexes A to D.**

6.1 Energy Charges

The Energy Charges of the reference generation tariff are based on the actual net electrical output measured in kWh and consist of:

(a) Fuel Cost Component;
(b) Local variable O&M Component
(c) Foreign Variable O&M Component.

A summary of the levelized Energy Charges is provided in the table below followed by detailed explanation of each item:

	Fuel Cost Component	Variable O&M (Local)	Variable O&M (Foreign)	Total Energy Charges
Tariff (cents/kWh)	4.094	0.0900	0.360	4.544

6.1.1 Fuel Cost Component

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

Output	72.4 MW		
	Bagasse (season)	Bagasse (Offseason)	Coal
Calorific Value (HHV)	2200 kcal/kg	2200 kcal/kg	6500 kcal/kg
Calorific Value (LHV)	1740 kcal/kg	1740 kcal/kg	6117.6 kcal/kg

Heat Rate	15,731 BTU/kWh	11681 BTU/kWh	11578 BTU/kWh
Thermal efficiency net	21.69%	29.21%	29.47%
Price - CIF Khi	$21.72/ton	$21.72/ton	$77/ton
FOB Coal			$65/ton

As a general comment, we submit that there will be a separate fuel cost component for each of bagasse (season), bagasse (offseason) and coal. Energy invoice will be based on the applicable fuel cost.

Once the fuel is purchased, the relevant indexation mechanism will be applied, which can be reviewed by the power purchaser.

(i) Indexation & Escalation

The Fuel Cost Component will be adjusted in accordance with price variation of fuel consumed using international Coal Price indices. The Coal sea-freight, inland freight and the Coal Premium/Discount will be charged as actual but will be subject to a transparent tendering process with the coal suppliers and the shipping companies. The FCC will be subject to foreign exchange adjustment, load correction and heat rate degradation factor.

Tariff is based on coal price of CIF Karachi @ $77 (FOB $65+transporation $12) for GCV 6500 kcal/kg. FOB coal price will be indexed using 50% Richards Bay and 50% Global Coal Newcastle indices and transportation will be charged on actual basis. The Petitioner is confident that procurement of coal on the aforesaid indices can be obtained on reasonable terms. In case of any change, the other suitable international liquid indices will be used.

(ii) Bagasse Pricing Mechanism and Indexation

In a previous tariff determination, the Authority has specified a mechanism valuing bagasse using FOB coal price. The Petitioner submits that bagasse valuation should be calculated fairly and CIF Coal is a more suitable yardstick to measure bagasse value.

Bagasse price will be indexed for any change in coal price during the month proceeding to the invoice month. For bagasse pricing and indexation factor calculation purposes, the LCV of coal and bagasse will be used. Calculation basis for bagasse pricing is provided below:

LCV of Design Coal used	:25,594 kJ/kg
Efficiency of Boiler with above coal	: 89.26%
Useful heat energy derived from coal	: 25,594x0.8926
	: 22,845.2 kJ/kg.

LCV of Bagasse used	: 7,280kJ/kg
Efficiency of Boiler with above Bagasse	: 88.5%
Useful heat energy derived from Bagasse	: 7,280x0.885 : 6,442.8 kJ/kg.
CIF Karachi price of Coal	: US$ 77
Calculated price of Bagasse	: 77x6442.8/22845.2 : $21.72

6.1.2 Variable O&M

This component primarily includes the cost of lubricant consumption, chemicals, consumables, spare parts, fuel for coal, bagasse and ash handling including stacking, piling, blending, minor maintenances, checks and inspections related to load variations. This component also includes the maintenance cost of conveyors, coal unloading system lubrications.

(i) Indexation and Escalation

The Local Variable O&M (**LVOM**) Cost Component of the Energy Charge will be quarterly indexed to the Pakistan Wholesale Price Index (WPI) (manufacturing), as notified by the Pakistan Federal Bureau of Statistics.

The Foreign Variable O&M (**FVOM**) Cost Component of the Energy Charge will 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.

6.2 Capacity Charge

The Capacity Charge component of the reference generation tariff is payable on the basis of the contract capacity established at the COD and annually thereafter.

The Petitioner intends to discuss the net contract capacity matter with the power purchaser and the GOP in due course. Keeping in view the sugar mills power requirements and the requirements of the financial institutions in project finance, a mutually acceptable mechanism with regards to the net contract capacity will be agreed with the off-taker.

The Capacity Charge comprises (a) Escalable Component and (b) Non- Escalable Component. A detailed breakup and explanation of these components is provided below.

6.2.1 Escalable Component

This component represents the Insurance Cost, Fixed O&M Cost (Foreign & Local), cost of working capital, Return on Equity during Construction (ROEDC) and Return on Equity (ROE). It also includes 7.5% Withholding Tax to be deducted from ROE and ROEDC.

The levelized tariff for the Escalable Component is tabulated below:

	Insurance	FO&M Local	FO& M Foreign	Cost of Working Capital	ROE	ROEDC	WHT	Total
Tariff (cents/k Wh)	0.337	0.394	0.263	0.273	1.168	0.107	0.096	2.638

AT 60% Capacity factor

6.2.2 Insurance

The insurance component consists of all-risk insurance/re-insurance for the Project, as well as business-interruption insurance. All insurances required under a standard PPA have been assumed. The insurance costs will be adjusted upon finalization of the EPCC but is likely to remain within the threshold of 1.35% of EPC Price as per Authority's previous rulings. Actual to be adjusted after finalization of the insurance arrangements.

(i) Indexation & Escalation

The Insurance Cost Component will 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.

6.2.3 Fixed O&M

The Fixed O&M component primarily represents the (a) Routine & Major Maintenances, (b) fixed costs of all the staff for Operation and Maintenance, (c) Material Handling costs, and (d) General administration and office costs.

The Routine Maintenance costs will be incurred on all major equipment of the Plant. Major Maintenance will be carried out after every four years.

The Material Handling includes coal handling, bagasse handling, and ash handling. Coal handling includes costs relating to coal unloading equipment, weigh-feeders, crushers, stockyard maintenance and re-claimers. The coal handling will be three folds process, primarily coal will be transported from ship to trucks, trucks to stockyard and then from stockyard to boiler for combustion. Similarly the costs associated with bagasse handling system includes:

- Cost of shifting arrangements from mills to bagasse storage bin/yard at the power plant side through conveying system and further from bin to boiler bagasse-feed system which comprises conveying system, weighing system, feed bin and finally bagasse firing system.

- Cost associated with Ash handling system includes Ash collection system for both dry and wet Ash, shifting system to ash storage area and ash dumping/disposal systems.

The general administration and office costs include all other costs required for the running of the Project. It includes professional fees, consultant's fees, administration and procurement costs, environmental monitoring costs, license and permits fees, bank charges, safety and security costs.

(i) Indexation & Escalation

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

(a) The Local Fixed O&M Cost Component will 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 will 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.

6.2.4 Cost of Working Capital

Cost of WCC has been calculated on the basis of expected payment terms under the Power Purchase Agreement and the minimum inventory level to be maintained for smooth operation of the power plant.

It is submitted that the Petitioner intends to have a coal inventory of 45 days during offseason and of 25 days during season. The price of coal has been calculated at current fuel prices and will therefore be indexed for fuel price variations at the time of COD. It is expected that lead time for coal supplier will be around 30 days.

Cost of WCC has been calculated on the following basis

Energy invoice receivables at 55 days (incl. 16% GST) -	$4.36m
Capacity Invoice receivable at 10 days -	$0.71m
Coal inventory (season 25 and offseason 45 days)	$2.23m
Total	$7.30m
Annual Working Capital Cost (@ KIBOR + 2%)	$1.04m

Indexation & Escalation

Any change in 3 months KIBOR and/or change in fuel price will be adjusted.

6.2.5 Return on Equity during Construction (ROEDC) and Return on Equity (ROE)

The ROEDC and ROE components include a return on invested equity resulting in an internal rate of return (IRR) of 18%.

Pakistan's energy mix consists of high percentage of imported fuel which is causing adverse impact on county's balance of payment, foreign exchange reserves and increasing fuel supply risk. While comparing with marginal fuel cost of electricity produced on HFO, the savings from bagasse base cogeneration are substantial. 2000–3000 MW on bagasse base cogeneration can result in fuel cost savings of US$18 to US $27 billion and foreign exchange savings of from US$ 25 to US$38 billion over 30 years spectrum.

Co-Gen IPPs is a quick and sustainable solution to country's energy need and will also reduce line losses due to their proximity to load centers. Co-Gen IPPs will uplift rural areas and help in the development of the agriculture sector also.

Furthermore, the return on investment to be allowed to the investors/ sponsors will remain within the country which will contribute towards the growth of the industry and the country.

Due to forgoing reasons, since the Project brings plenty of benefits to the country, investors should be encouraged by offering higher ROE. This will help diverting more investors towards the indigenous fuel based power plant which will result in positive impact on Pakistan's economy.

(i) Indexation and Escalation

As per the decision of the Economic Coordination Committee, the ROEDC, ROE and WHT component of the reference generation tariff will 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.

6.2.6 Non-Escalable Component

The tables in Annexes E and F provide a summary of the Non-Escalable Component, which mainly comprises repayment of the principle portion of the debt and payment of interest thereon.

The following assumptions have been made in calculating this component:

- Amount of Debt: USD. 50% Foreign Debt and 50% Local Debt
- Term of debt. 10+2 years
- Interest Rates. LIBOR + 3.5% (4.5%) and KIBOR + 3% (15.25%)
- Repayment. 40 Qtrly installments starting from COD
- The margin on foreign borrowing is assumed at 3.5%. In case the margin exceeds due to adverse macro economic conditions in Pakistan and/or liquidity constraints, adjustment will be made at actual at the time of the Financial Close.
- The Petitioner has assumed the terms including but not limited to the tenor of the debt based on international liquidity conditions. Any change in the actual debt terms will require readjustment of the debt component of the tariff.
- The Project drawdown schedule and related Interest during Construction (IDC) is based on preliminary assumptions. This will be adjusted at COD on account of actual variation in interest on the basis of actual drawdown for the period during construction.
- No taxes or duties have been assumed on the repayment of the loans.

(i) Indexation & Escalation

The Non-Escalable Component will be adjusted to:

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

(b) the 3m LIBOR or KIBOR as the case may be (or any other benchmark as applicable) rate at the end of each quarter.

6.2.7 Foreign Currency and Inflation Adjustment

The foreign components of the Capacity Charge and the Energy Charge will each be indexed periodically by using the FX Adjustment Factor according to the following formula:

$$\mathbf{FXadjust_{qy} = FXRate_{qy\text{-}1} / FXRate_{Ref}}$$

where:

$FXadjust_{qy}$	the FX Adjustment Factor applicable for the quarter
$FXRate_{qy\text{-}1}$	the quarterly TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan which prevailed over the quarter prior to the quarter; and
$FXRate_{Ref}$	the Reference Exchange Rate (Rs. 80 per USD)

The foreign components of the Capacity Charge and Energy Charge will each be indexed every quarter by using the Foreign Inflation Adjustment Factor calculated according to the following formula:

$$\mathbf{US\text{-}CPIadjust_{qy} = US\text{-}CPI_{qy\text{-}1} / US\text{-}CPI_{Ref}}$$

$US\text{-}CPIadjust_{qy}$	the Foreign Inflation Adjustment Factor applicable for the Quarter
$US\text{-}CPI_{yq\text{-}1}$	the United States Consumer Price Index notified by bureau of labor statistics (all urban consumers) for the prevailing Quarter; and
$US\text{-}CPI_{Ref}$	the Reference US-CPI (216.18 for October 2009)

The local components of the Capacity Charge and Energy Charge will each be indexed every quarter by using the Local Inflation Adjustment Factor calculated according to the following formula:

$$\mathbf{WPIadjust_{qy} = WPI_{qy\text{-}1} / WPI_{Ref}}$$

$WPIadjust_{qy}$	the Local Inflation Adjustment Factor applicable for the Quarter
$WPI_{qy\text{-}1}$	the wholesale price index (manufactures) notified by the federal bureau of statistics for the relevant Quarter; and

WPI_{Ref}	the Reference WPI (145.36 for October 2009)

6.3 Pass-Through Items

In addition to the pass-through items stipulated in the standardized PPA and in the Petition herein, any taxes, duties and levies and or governmental impositions of whatsoever nature not factored in the tariff calculation will be treated as part of the Project cost at the time of COD.

6.4 Adjustments at Commercial Operations Date (COD)

6.4.1 At COD, the Escalable and the Non-Escalable Components will be adjusted by the inflation factors and reference exchange rates, as the case may be, as defined and described herein.

6.4.2 The relevant reference tariff components will also be adjusted on account of variation in FCY/PKR, and by the then prevailing LIBOR and KIBOR (if applicable). Furthermore, any debt relating cost including registration of foreign currency debt will be adjusted at the COD.

6.4.3 Debt service, ROE and ROEDC will be adjusted on account of actual variation in debt and equity drawdown, actual interest during construction and financing costs/fees, actual customs duties and taxes. Once adjusted, the Debt service, ROE and ROEDC will be updated according to the relevant indexations.

7. ADJUSTMENT POST EPCC FINALIZATION

Following finalization of the EPC price via competitive bidding, the Petitioner will request the learned Authority to allow adjustment in the relevant components of the tariff. The Petitioner respectfully requests the honorable Authority to allow such adjustment through an appropriate provision in its tariff ruling. A quick adjustment mechanism will enable the Petitioner to issue the notice to proceed to the EPC Contractor within the limited bid validity date and thereby facilitate expeditious implementation of the Project. The Petitioner submits that the adjustment should be allowed within a period ten working days.

8. GENERAL ASSUMPTIONS

In addition to the assumptions taken in the foregoing paragraphs, the Petitioner's generation tariff takes into account the following assumptions. Changes in any of these will result in an appropriate adjustment to the proposed tariff:

8.1.1 Annual plant availability of 86% assumed. Scheduled outage allowance of 30 days per annum assumed, except in a major overhaul year where the scheduled outage period will be 60 days. Annual unscheduled outages of 21 days assumed.

8.1.2 The Power Purchaser will be responsible for procuring, financing, constructing, operating and maintenance of the interconnection, metering and transmission facilities at Project site.

8.1.3 All fuels costs during plant tests after synchronization is assumed to be paid for by the Power Purchaser.

8.1.4 There will be separate fuel cost tariff for bagasse (season), bagasse (offseason) and coal. Energy invoice will be based on the applicable fuel cost.

8.1.5 The weighted average fuel cost component is based on plant operation on bagasse for 180 days and the remaining period of an agreement year on coal.

8.1.6 The tariff is calculated on the basis of a notional 60% plant load factor.

8.1.7 A constant ROE is assumed, which results in an IRR of 18% over 30 years.

8.1.8 No hedging cost has been assumed for exchange rate fluctuations during construction.

8.1.9 No political risk insurance has been assumed on debt and/or equity. The premium prevailing at the time of financial close based on the changes in the international and Pakistani macro economic situation including Pakistan's geopolitical situation will be charged.

8.1.10 Project contingencies, debt service reserves and maintenance reserves are not included in tariff calculations. If required by the lenders, these will be adjusted accordingly in the tariff.

8.1.11 Any 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.

8.1.12 No withholding tax on supply of plant and equipment.

8.1.13 Withholding tax on dividends is assumed at 7.5%.

8.1.14 No taxes or duties (including stamp duties) have been assumed on the execution of the financing documents, loan repayment, interest repayment, agency fee, commitment fee, upfront fee and fuel purchase or transportation.

8.1.15 No letter of credit and or confirmation charges in relation to EPCC or import of coal assumed. If applicable, an adjustment will be sought in the Project cost at the time of COD or be considered a pass through during operations, as the case may be.

8.1.16 The Power Purchaser will be responsible for the transmission and system studies. Further, the cost of metering system (except back up meter) and remote terminal unit (RTU) will be borne by the Power Purchaser. In case the Company is required to meet this cost, it will be treated as pass-through item.

8.1.17 No free startups are assumed.

8.1.18 The information pertaining to the plant net efficiency of 21.69%, 29.21% and 29.47% (LHV) for Season Bagasse, Offseason Bagasse and Coal, respectively, and start-up costs will be adjusted in accordance with the EPCC.

8.1.19 The Project cost does not include any piling work that may or may not be required. The Petitioner will seek such cost if piling is required.

8.1.20 The EPC cost as well as 50% of the debt are assumed in US dollar. In case of any other foreign currencies, appropriate indexations will be provided.

8.1.21 The tariff will be based on minimum take or pay – minimum dispatch level to be agreed with the power purchaser in due course. Any liquidated damages levied by the coal suppliers due to lower dispatch will be passed through to the Power Purchaser.

8.1.22 Additional coal (over and above the minimum take or pay) will be purchased through options and/or additional quantity from coal suppliers and/or spot market. Any additional cost and/or premia paid in this regard will be passed through to the Power Purchaser.

8.1.23 The Company has not assumed any security deposit that may be required by the coal suppliers pursuant to the CSA.

8.1.24 No royalty or any payment or fees to the relevant port authorities has been assumed.

8.1.25 If the Company is required to comply with an environmental regime more stringent than the one assumed then there will be an increase in the EPCC cost on account of equipment to be installed to offset SOx sand NOx emissions. Such costs will become part of the overall Project Costs.

8.1.26 All invoicing and payment terms are assumed to be in accordance with the standardized PPA under the 2002 Power Policy.

8.1.27 Any benefit/concession/incentives given to any other IPP/projects will also be given to the Company.

8.1.28 Any additional costs incurred to cater for any modifications or additions required by the Power Purchaser will form part of the Project cost at the COD.

9. DETERMINATION SOUGHT

In light of the foregoing submissions, the learned Authority is kindly requested to approve the Company's generation tariff together with the pertinent indexations in accordance with the Project costs and the assumptions related thereto mentioned above for a 30-years PPA term post COD.

The Petitioner will be pleased to provide any further information, clarification or explanation that may be required by the Authority during its evaluation process.

JDW Power (Private) Limited
Through Hammad Rabbani
Authorized Representative

JDW Cogeneration Power Project

Annexure - A

Reference Tariff

Weighted Average Fuel Cost

	ENERGY PURCHASE PRICE				CAPACITY PURCHASE PRICE												TOTAL TARIFF	
Year	Fuel	VOM (Local)	VOM (Foreign)	Total Energy Charge	FOM (Local)	FOM (Foreign)	Insurance	ROE	ROEDC	WHT	WCC	Principal Payment (Local)	Interest Payment (Local)	Principal Payment (Foreign)	Interest Payment (Foreign)	Total Capacity Charge	Total Capacity Charge @ 60%	Total Tariff	Total Tariff
	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kWh	PKR/kWh	US cents/kWh
1	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.934	0.290	0.272	0.505	3.268	5.446	9.082	11.352
2	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.887	0.337	0.249	0.528	3.268	5.446	9.082	11.352
3	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.833	0.391	0.225	0.553	3.268	5.446	9.082	11.352
4	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.770	0.455	0.199	0.578	3.268	5.446	9.082	11.352
5	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.696	0.528	0.173	0.604	3.268	5.446	9.082	11.352
6	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.611	0.613	0.145	0.632	3.268	5.446	9.082	11.352
7	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.512	0.712	0.116	0.661	3.268	5.446	9.082	11.352
8	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.397	0.827	0.086	0.691	3.268	5.446	9.082	11.352
9	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.263	0.961	0.054	0.723	3.268	5.446	9.082	11.352
10	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.108	1.116	0.021	0.756	3.268	5.446	9.082	11.352
11	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
12	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
13	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
14	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
15	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
16	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
17	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
18	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
19	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
20	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
21	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
22	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
23	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
24	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
25	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
26	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
27	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
28	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
29	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182
30	3.275	0.072	0.288	3.635	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.746	7.182

Levelized Tariff	**7.920**	**9.900**

JDW Power Project

Reference Tariff

Fuel Cost: Bagasse During Crushing Season

Annexure - B

	ENERGY PURCHASE PRICE				CAPACITY PURCHASE PRICE												TOTAL TARIFF	
Year	Fuel	VOM (Local)	VOM (Foreign)	Total Energy Charge	FOM (Local)	FOM (Foreign)	Insurance	ROE	ROEDC	WHT	WCC	Principal Payment (Local)	Interest Payment (Local)	Principal Payment (Foreign)	Interest Payment (Foreign)	Total Capacity Charge	Total Capacity Charge @ 60%	Total Tariff PKR	Total Tariff USD
	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kWh	PKR/kWh	US cents/kWh
1	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.934	0.290	0.272	0.505	3.268	5.446	9.766	12.208
2	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.887	0.337	0.249	0.528	3.268	5.446	9.766	12.208
3	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.833	0.391	0.225	0.553	3.268	5.446	9.766	12.208
4	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.770	0.455	0.199	0.578	3.268	5.446	9.766	12.208
5	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.696	0.528	0.173	0.604	3.268	5.446	9.766	12.208
6	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.611	0.613	0.145	0.632	3.268	5.446	9.766	12.208
7	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.512	0.712	0.116	0.661	3.268	5.446	9.766	12.208
8	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.397	0.827	0.086	0.691	3.268	5.446	9.766	12.208
9	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.263	0.961	0.054	0.723	3.268	5.446	9.766	12.208
10	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.108	1.116	0.021	0.756	3.268	5.446	9.766	12.208
11	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
12	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
13	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
14	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
15	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
16	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
17	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
18	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
19	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
20	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
21	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
22	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
23	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
24	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
25	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
26	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
27	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
28	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
29	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038
30	3.960	0.072	0.288	4.320	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	6.430	8.038

Levelized Tariff	**8.605**	**10.756**

JDW Power Project

Reference Tariff

Fuel Cost: Bagasse During OffSeason

Annexure - C

	ENERGY PURCHASE PRICE				CAPACITY PURCHASE PRICE												TOTAL TARIFF	
Year	Fuel	VOM (Local)	VOM (Foreign)	Total Energy Charge	FOM (Local)	FOM (Foreign)	Insurance	ROE	ROEDC	WHT	WCC	Principal Payment (Local)	Interest Payment (Local)	Principal Payment (Foreign)	Interest Payment (Foreign)	Total Capacity Charge	Total Capacity Charge @ 60%	Total Tariff PKR	Total Tariff USD
	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kWh	PKR/kWh	US cents/kWh
1	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.934	0.290	0.272	0.505	3.268	5.446	8.747	10.934
2	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.887	0.337	0.249	0.528	3.268	5.446	8.747	10.934
3	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.833	0.391	0.225	0.553	3.268	5.446	8.747	10.934
4	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.770	0.455	0.199	0.578	3.268	5.446	8.747	10.934
5	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.696	0.528	0.173	0.604	3.268	5.446	8.747	10.934
6	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.611	0.613	0.145	0.632	3.268	5.446	8.747	10.934
7	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.512	0.712	0.116	0.661	3.268	5.446	8.747	10.934
8	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.397	0.827	0.086	0.691	3.268	5.446	8.747	10.934
9	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.263	0.961	0.054	0.723	3.268	5.446	8.747	10.934
10	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.108	1.116	0.021	0.756	3.268	5.446	8.747	10.934
11	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
12	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
13	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
14	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
15	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
16	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
17	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
18	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
19	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
20	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
21	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
22	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
23	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
24	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
25	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
26	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
27	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
28	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
29	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
30	2.941	0.072	0.288	3.301	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.411	6.764
																		-	
																Levelized Tariff		7.585	9.482

JDW Power Project

Reference Tariff

Fuel Cost: Coal

Annexure - D

Year	ENERGY PURCHASE PRICE				CAPACITY PURCHASE PRICE												TOTAL TARIFF	
	Fuel	VOM (Local)	VOM (Foreign)	Total Energy Charge	FOM (Local)	FOM (Foreign)	Insurance	ROE	ROEDC	WHT	Working Capital Charges	Principal Payment (Local)	Interest Payment (Local)	Principal Payment (Foreign)	Interest Payment (Foreign)	Total Capacity Charge	Total Capacity Charge @ 60%	Total Tariff PKR	Total Tariff USD
	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kWh	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kW/hr	PKR/kWh	PKR/kWh	US cents/kWh
1	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.934	0.290	0.272	0.505	3.268	5.446	8.746	10.932
2	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.887	0.337	0.249	0.528	3.268	5.446	8.746	10.932
3	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.833	0.391	0.225	0.553	3.268	5.446	8.746	10.932
4	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.770	0.455	0.199	0.578	3.268	5.446	8.746	10.932
5	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.696	0.528	0.173	0.604	3.268	5.446	8.746	10.932
6	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.611	0.613	0.145	0.632	3.268	5.446	8.746	10.932
7	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.512	0.712	0.116	0.661	3.268	5.446	8.746	10.932
8	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.397	0.827	0.086	0.691	3.268	5.446	8.746	10.932
9	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.263	0.961	0.054	0.723	3.268	5.446	8.746	10.932
10	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	0.108	1.116	0.021	0.756	3.268	5.446	8.746	10.932
11	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
12	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
13	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
14	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
15	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
16	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
17	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
18	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
19	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
20	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
21	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
22	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
23	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
24	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
25	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
26	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
27	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
28	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
29	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
30	2.940	0.072	0.288	3.300	0.189	0.126	0.162	0.561	0.051	0.046	0.131	-	-	-	-	1.266	2.110	5.410	6.762
																		-	
																Levelized Tariff		7.584	9.480

JDW Cogeneration Power Project

Debt Schedule - Local

Annexure - E

Quarter	Beg. Balance	Interest Payment	Principal Repayment	Total Debt Service	Closing Bal	Annual Interest Repayment	Annual Principal Repayment	Annual Debt Service
	Rs-MM	Rs-MM	Rs-MM	Rs-MM	Rs-MM	Rs/kW/hr	Rs/kW/hr	Rs/kW/hr
1	3,951.90	149.72	43.19	192.90	3,908.71			
2	3,908.71	148.07	44.83	192.90	3,863.88			
3	3,863.88	146.36	46.54	192.90	3,817.34			
4	3,817.34	144.59	48.32	192.90	3,769.02			
Yr 1		**588.73**	**182.88**	**771.61**		0.928	0.288	1.217
5	3,769.02	142.74	50.16	192.90	3,718.86			
6	3,718.86	140.83	52.07	192.90	3,666.79			
7	3,666.79	138.85	54.06	192.90	3,612.73			
8	3,612.73	136.79	56.12	192.90	3,556.62			
Yr 2		**559.21**	**212.41**	**771.61**		0.882	0.335	1.217
9	3,556.62	134.65	58.26	192.90	3,498.36			
10	3,498.36	132.42	60.48	192.90	3,437.88			
11	3,437.88	130.12	62.78	192.90	3,375.10			
12	3,375.10	127.73	65.18	192.90	3,309.92			
Yr 3		**524.91**	**246.70**	**771.61**		0.828	0.389	1.217
13	3,309.92	125.24	67.66	192.90	3,242.26			
14	3,242.26	122.66	70.24	192.90	3,172.01			
15	3,172.01	119.98	72.92	192.90	3,099.09			
16	3,099.09	117.20	75.70	192.90	3,023.39			
Yr 4		**485.09**	**286.53**	**771.61**		0.765	0.452	1.217
17	3,023.39	114.32	78.59	192.90	2,944.81			
18	2,944.81	111.32	81.58	192.90	2,863.22			
19	2,863.22	108.21	84.69	192.90	2,778.53			
20	2,778.53	104.98	87.92	192.90	2,690.61			
Yr 5		**438.83**	**332.78**	**771.61**		0.692	0.525	1.217
21	2,690.61	101.63	91.27	192.90	2,599.34			
22	2,599.34	98.15	94.75	192.90	2,504.58			
23	2,504.58	94.54	98.37	192.90	2,406.22			
24	2,406.22	90.79	102.12	192.90	2,304.10			
Yr 6		**385.10**	**386.51**	**771.61**		0.607	0.609	1.217
25	2,304.10	86.89	106.01	192.90	2,198.09			
26	2,198.09	82.85	110.05	192.90	2,088.04			
27	2,088.04	78.66	114.25	192.90	1,973.79			
28	1,973.79	74.30	118.60	192.90	1,855.19			
Yr 7		**322.70**	**448.91**	**771.61**		0.509	0.708	1.217
29	1,855.19	69.78	123.12	192.90	1,732.07			
30	1,732.07	65.08	127.82	192.90	1,604.25			
31	1,604.25	60.21	132.69	192.90	1,471.56			
32	1,471.56	55.15	137.75	192.90	1,333.81			
Yr 8		**250.23**	**521.38**	**771.61**		0.395	0.822	1.217
33	1,333.81	49.90	143.00	192.90	1,190.80			
34	1,190.80	44.45	148.45	192.90	1,042.35			
35	1,042.35	38.79	154.11	192.90	888.24			
36	888.24	32.91	159.99	192.90	728.25			
Yr 9		**166.05**	**605.56**	**771.61**		0.262	0.955	1.217
37	728.25	26.81	166.09	192.90	562.16			
38	562.16	20.48	172.42	192.90	389.74			
39	389.74	13.91	178.99	192.90	210.74			
40	210.74	7.08	185.82	192.90	24.92			
Yr 10		**68.29**	**703.32**	**771.61**		0.108	1.109	1.217

JDW Cogeneration Power Project

Debt Schedule - Foreign

Annexure - F

Quarter	Beg. Balance	Interest Payment	Principal Repayment	Total Debt Service	Closing Bal	Annual Interest Repayment	Annual Principal Repayment	Annual Debt Service
	Rs MM	Rs-MM	Rs-MM	Rs-MM	Rs-MM	Rs/kW/hr	Rs/kW/hr	Rs/kW/hr
1	3,951.90	44.18	78.28	122.46	3,873.62			
2	3,873.62	43.30	79.16	122.46	3,794.46			
3	3,794.46	42.41	80.05	122.46	3,714.41			
4	3,714.41	41.51	80.95	122.46	3,633.46			
Yr 1		**171.39**	**318.44**	**489.83**		0.270	0.502	0.772
5	3,633.46	40.60	81.86	122.46	3,551.60			
6	3,551.60	39.68	82.78	122.46	3,468.82			
7	3,468.82	38.74	83.71	122.46	3,385.11			
8	3,385.11	37.80	84.65	122.46	3,300.45			
Yr 2		**156.82**	**333.01**	**489.83**		0.247	0.525	0.772
9	3,300.45	36.85	85.61	122.46	3,214.85			
10	3,214.85	35.89	86.57	122.46	3,128.28			
11	3,128.28	34.91	87.54	122.46	3,040.73			
12	3,040.73	33.93	88.53	122.46	2,952.20			
Yr 3		**141.58**	**348.25**	**489.83**		0.223	0.549	0.772
13	2,952.20	32.93	89.52	122.46	2,862.68			
14	2,862.68	31.92	90.53	122.46	2,772.15			
15	2,772.15	30.91	91.55	122.46	2,680.60			
16	2,680.60	29.88	92.58	122.46	2,588.02			
Yr 4		**125.64**	**364.19**	**489.83**		0.198	0.574	0.772
17	2,588.02	28.83	93.62	122.46	2,494.39			
18	2,494.39	27.78	94.68	122.46	2,399.72			
19	2,399.72	26.72	95.74	122.46	2,303.98			
20	2,303.98	25.64	96.82	122.46	2,207.16			
Yr 5		**108.97**	**380.86**	**489.83**		0.172	0.601	0.772
21	2,207.16	24.55	97.91	122.46	2,109.25			
22	2,109.25	23.45	99.01	122.46	2,010.25			
23	2,010.25	22.33	100.12	122.46	1,910.12			
24	1,910.12	21.21	101.25	122.46	1,808.87			
Yr 6		**91.54**	**398.29**	**489.83**		0.144	0.628	0.772
25	1,808.87	20.07	102.39	122.46	1,706.49			
26	1,706.49	18.92	103.54	122.46	1,602.95			
27	1,602.95	17.75	104.70	122.46	1,498.24			
28	1,498.24	16.57	105.88	122.46	1,392.36			
Yr 7		**73.31**	**416.51**	**489.83**		0.116	0.657	0.772
29	1,392.36	15.38	107.07	122.46	1,285.29			
30	1,285.29	14.18	108.28	122.46	1,177.01			
31	1,177.01	12.96	109.50	122.46	1,067.52			
32	1,067.52	11.73	110.73	122.46	956.79			
Yr 8		**54.25**	**435.57**	**489.83**		0.086	0.687	0.772
33	956.79	10.48	111.97	122.46	844.81			
34	844.81	9.22	113.23	122.46	731.58			
35	731.58	7.95	114.51	122.46	617.07			
36	617.07	6.66	115.80	122.46	501.28			
Yr 9		**34.32**	**455.51**	**489.83**		0.054	0.718	0.772
37	501.28	5.36	117.10	122.46	384.18			
38	384.18	4.04	118.42	122.46	265.77			
39	265.77	2.71	119.75	122.46	146.02			
40	146.02	1.36	121.09	122.46	24.92			
Yr 10		**13.47**	**476.36**	**489.83**		0.021	0.751	0.772