

National Electric Power Regulatory Authority Islamic Republic of Pakistan

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> No. NEPRA/PAR-142//15660-15662 October 28, 2015

Subject: Decision of the Authority in the matter of Request filed by Central Power Purchasing Agency (Guarantee) Limited for approval of Negotiated/Signed Power Purchase Agreement regarding Procurement of Power from 102 MW Gulpur Hydropower Project of Mira Power Limited [Case # NEPRA/PAR-142]

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Schedule 1 (41 pages) in Case No. NEPRA/PAR-142.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

Enclosure: As above

(Syed Safeer Hussain)

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

CC:

- 1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
- 2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

Decision of the Authority in the matter of request filed by Central Power Purchasing Agency (Guarantee) Limited for approval of negotiated/signed Power Purchase Agreement regarding procurement of power from 102-MW Gulpur Hydropower Project of Mira Power Limited(CASE NO. NEPRA/R/SAT-I/PAR-142)

Central Power Purchasing Agency (Guarantee) Limited (hereinafter referred to as "the Petitioner or CPPA-G") filed request on September 09, 2015 for approval of Power Acquisition Contract/Power Purchase Agreement under the NEPRA Interim Power Procurement (Procedure and Standards) Regulations 2005 (hereinafter referred to as the "IPPRs-2005") for procurement of power from 102-MW Gulpur Hydropower Project being set up by Mira Power Limited (MPL). Since the project is located on Poonch River in the state of Azad Jammu and Kashmir which is outside the purview of the NEPRA Act, therefore, the instant request has been filed by CPPA-G under regulation 5 of the NEPRA IPPRs-2005. According to the IPPRs-2005, the Authority, in this case, is required to approve the Power Acquisition Contract or Power Purchase Agreement (PPA) agreed/signed bilaterally between the power producer and the power purchaser at a negotiated rate and other terms and conditions of supply of energy as approved by the Authority.

- 2. The Authority has already granted its permission to CPPA-G (then NTDC/CPPA)vide its decision dated February 10, 2009 for procurement of power from 102-MW Gulpur Hydropower Project of Mira Pakistan Limited and negotiation of power purchase agreement containing tariff and terms and conditions of power procurement as per requirement of the NEPRA IPPRs-2005. Subsequently, CPPA-G (then NTDC/CPPA) filed a request with the Authority for approval of negotiated power purchase agreement containing tariff of Rs.9.6034/kWh (Us cents 9.7994/kWh levelized over 30 years project life) along with tariff adjustments/indexations, based on EPC cost bidding and other negotiated project costs. The CPPA-G's request was admitted on January 13, 2015 for further consideration by the Authority. The Authority after fulfilling procedural requirements as per provisions of relevant NEPRA Rules and Regulations approved levelized tariff of Rs.9.4617/kWh (US cents 9.0241/kWh at reference US\$/PKR exchange rate of Rs. 104.85) and tariff adjustments and indexation as applicable to other hydropower projects along with directions to CPPA-G for submission of amended/revised Power Purchase Agreement for approval of the Authority vide its decision communicated on August 03, 2015.
- 3. The instant request of CPPA-G for approval of revised/amended PPA containing tariff, adjustments/indexation as per Schedule-1 of the PPA has been examined and is found to be consistent with earlier decision of the Authority in the matter dated August 03, 2015.
- 4. Now therefore, the Authority, in exercise of its powers contained in Regulation 5(6) of the Interim Power Procurement (Procedures & Standards) Regulations 2005, has decided to approve the revised/amended Power Purchase Agreement dated September 03, 2015 duly signed between the CPPA-G and the MPL for procurement of power from 102-MW Gulpur Hydropower Project, at reference negotiated tariff of Rs 9.4617/kWh (US cents 9.0241/kWh at US\$/PKR exchange rate of Rs. 104.85) levelized over a period of 30 years starting from the Commercial Operation Date (COD) of the project and other terms and conditions, indexations and cost escalation of civil works, bilaterally agreed



between the parties, as contained in Schedule-1 of the aforesaid Power Purchase Agreement attached herewith.

Authority

Khawaja Muhammad Naeem

Member

Syed Masson Will Hassan Nagvi 27 | x / 15

Himayat Ullah Khan

Member

Maj^(Rtd) Haroon Rashid

Member

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Brig (Rtd) Tariq Sadoezai X

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SCHEDULE 1 TARIFF, INDEXATION AND ADJUSTMENT

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PART I: GENERAL

1. Introduction

- 1.1 This Schedule 1 is attached to and constitutes an integral part of the Power Purchase Agreement (the "Power Purchase Agreement") dated as of 3rd day of September 2015 by and between the Power Purchaser and the Company. This Schedule 1 specifies the methods for calculating the payments to be made to the Company by the Power Purchaser under Sections 9.1 (Capacity Payments for Tested Capacity), Section 9.2 (Energy Payments for Net Electrical Output), Section 9.3 (Water Use Payments for Net Electrical Output), Section 9.5 (Pass-Through Item(s); Supplemental Tariffs), Section 9.6 (Liquidated Damages), Section 8.7 (Payment for Net Electrical Output During Testing) and Section 14.4 (Consequence for Costs and/or Savings resulting from a Change in Tax) of the Power Purchase Agreement. It also specifies the methods for making adjustments to such payments for changes in exchange rate and price indices.
 - (a) The methods for calculating the regular Monthly payments to be made to the Company by the Power Purchaser under Sections 9.1 (Capacity Payments for Tested Capacity) and 9.2 (Energy Payments for Net Electrical Output) and 9.3 (Water Use Payments for Net Electrical Output), and for calculating the liquidated damages to be payable by the Company to the Power Purchaser under Section 9.6 (Liquidated Damages) are set forth in Part II of this Schedule 1.
 - (b) The method for calculating Supplemental Tariff payments to be made to the Company by the Power Purchaser under Section 9.5(b) of the Power Purchase Agreement are set forth in Part III. Additionally, the methods for calculating payments to be made to the Company by the Power Purchaser or to the Power Purchaser by the Company, as the case may be, for Changes in Tax under Sections 14.4(a) and 14.4(b) of the Power Purchase Agreement are set forth in Part III.
 - (c) The methods for calculating additional payments to be made to the Company by the Power Purchaser for the Pass-Through Item(s) under Section 9.5(a) and Payments for Net Electrical Output during testing under Section 8.7 of the Power Purchase Agreement are set forth in Part IV.
 - (d) The methods for calculating adjustments for price index changes and foreign exchange rate variations against the reference values, key assumptions of the Reference Tariff and adjustments of Reference Tariff at Commercial Operations Date are set forth in Parts V.
- 1.2 The billing and payment procedures as set forth in Article IX of the Power Purchase Agreement shall apply to all payment obligations referred to in this Schedule 1, unless otherwise specified therein.

2. Definitions

Capitalized terms used but not defined in this Schedule I shall have the meaning given to them in the body of the Power Purchase Agreement. Wherever the following terms appear in this Schedule I, they shall have the meanings stated below:

"Consumer Price/Index" or "CPI" means the consumer price index for general as notified from time to time by the GOP's Federal Bureau of Statistics (or any successor or replacement agency thereto).

"Current Indices" means the Quarterly FX, the Quarterly US-CPI, the Quarterly CPI, as applicable, calculated for the Quarter immediately preceding the current Quarter and applicable for the current Quarter; the Foreign Loan Interest Adjustment Factor (FLIAFs), the Local Loan Interest Adjustment Factor (LLIAFs), the Semiannual FX as applicable, calculated for the Semiannual Period immediately preceding the current Semiannual Period, and applicable for the current Semiannual Period, and the Yearly CPI, as applicable, calculated for the Year immediately preceding the current Year and applicable for the current Year.

"Debt Service Component" has the meaning as formulated for "Debt Service Comp_M" in Section 5.1 of this Schedule.

"EPC Cost" means the EPC Cost determined at Commercial Operations Date after applying adjustment on Reference EPC Cost as per Annex V.

"Exchange Rate" means the TT&OD selling rate for Dollars expressed in Rupees, as published by the National Bank of Pakistan prevailing at the close of Wednesday that is also a Business Day, and with respect to any Wednesday that is not a Business Day, the TT&OD selling rate for Dollars expressed in Rupees, as published by the National Bank of Pakistan prevailing at the close of the last preceding Business Day prior to such Wednesday.

"Fixed O&M Component" has the meaning as formulated for "Fixed O&M_M" in Section 5.1 of this Schedule.

"FX Adjustment Factor" means the factor that is used to adjust the foreign components of the Capacity Price for fluctuations in the value of the Rupee against the Dollar, which factor shall be calculated as specified in Part V.

"Insurance Component" has the meaning as formulated for "Insurance_M" in Section 5.1.

"KIBOR" as defined in the Power Purchase Agreement.

"kWh" means a kilowatt-hour.

"<u>Local Inflation Adjustment Factor</u>" means the factor that is used to adjust the local cost components of the Fixed O&M Component, the Variable O&M Component, and Water Use Charge, for fluctuations in Consumer Price Index (CPI) for 'General' in Pakistan, which factor shall be calculated as specified in Part V.

"Non-Debt Component" has the meaning as formulated for "Non-Debt Comp_M" in Section 5.1.

"Quarter" means each three (3) Month period of a Year, being 1st January to 31st March, 1st April to 30th June, 1st July to 30th September and 1st October to 31st December, as the case may be, or the period commencing on the Commercial Operations Date and ending immediately preceding the day before the beginning of any such three (3) Month period.

"Quarterly CPI" means the average of the end of Month values for the CPI in the Quarter immediately preceding the relevant Quarter, which shall equal the sum of the Month-end CPI values in the Quarter immediately preceding the Quarter, that included Month M, divided by the number of such values; provided, however, that if any such values for any of such Quarter are not available, then the average of the Month-end values for the most recent available three (3) Months shall be used, unless directed by NEPRA to use any other months in lieu thereof.

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"Quarterly FX" means the average of each of the Exchange Rates in the Quarter immediately preceding the relevant Quarter, which shall equal the sum of the Exchange Rates in such immediately preceding Quarter divided by the number of such Exchange Rates.

"Quarterly US-CPI" means the average of each of the end of Month values for the US-CPI in the Quarter immediately preceding the relevant Quarter, which shall equal the sum of all the Month-end US-CPI values in the Quarter immediately preceding the Quarter divided by the number of such values; provided, that if any such values for any of such Quarter are not available, then the average of the end of Month values for the most recent available three (3) Months shall be used.

"Reference Capacity Price" means the amount expressed in Rs./kW/Month payable to the Company, comprised of Reference Fixed O&M Component, Reference Insurance Component, Reference Return on Equity Component, Reference Return on Equity during Construction Component, and Reference Debt Service Component as set out in Reference Tariff Table in Annex I.

"Reference CPI" as set forth in Annex IV.

"Reference Debt Service Component" means the component, expressed in Rs./kW/Month (representing the aggregate of Reference Foreign Debt Principal, Reference Foreign Debt Interest, Reference Local Debt Principal and Reference Local Debt Interest), payable to the Company for making generating capacity available to the Power Purchaser that is intended to compensate the Company for the debt servicing portions of the cost of the Tested Capacity, and which component (whether or not such component actually compensates the Company for providing such capacity) is set forth in Annex I and shall be subject to indexation as provided in this Schedule 1.

"Reference Energy Price" means the amount, expressed in Rs./kWh, payable to the Company and comprising of Reference Water Use Charge Component plus the Reference Variable O&M Component as set out in Reference Tariff Table in Annex-1.

"Reference EPC Cost" means the reference EPC Cost approved as the basis for the Reference Tariff.

"Reference Exchange Rate" as provided for in Annex IV.

"Reference Foreign Debt Principal" means the component expressed in Rs./kW/Month, payable to the Company for the foreign debt principal outstanding at the beginning of each Semiannual Period following the Commercial Operations Date during the foreign loan repayment period as set forth in Annex I

"Reference Foreign Debt Interest" means the component in Rs./kW/Month, payable to the Company for the foreign loan interest charges for foreign debt servicing which components shall be as set forth in Annex I.

"Reference Foreign Fixed O&M Component" means the component, in Rs./kW/Month, payable to the Company for the foreign portion of fixed costs of operation and maintenance, as set forth in Annex I.

"Reference Insurance Component" means the component in Rs./kW/Month, payable to the Company for the insurance cost, which components shall be as set forth in Annex I.

"Reference LIBOR" as provided in Annex IV.

"Reference Local Debt Principal" means the component, expressed in Rs./kW/Month, payable to the Company for the amount of local debt principal outstanding at the beginning of each Semiannual Period following the Commercial Operations Date during the local loan repayment period, which components shall be as set forth in Annex I.

"Reference Local Debt Interest" means the component comprised of local loan interest charges thereof in Rs./kW/Month, payable to the Company for local debt servicing as set forth in Annex I.

"Reference Local Fixed O&M Component" means the component, in Rs./kW/Month, payable to the Company for the local portion of fixed costs of operation and maintenance, as set forth in Annex I.

"Reference Non-Debt Service Component" means the component, which comprise of Reference Foreign Fixed O&M Component, Reference Local Fixed O&M Component, Reference Insurance Component, Reference Return on Equity Component and Reference Return on Equity During Construction Component expressed in Rs./kW/Month, payable to the Company for making generating capacity available to the Power Purchaser that is intended to compensate the Company for the cost of the Tested Capacity, excluding the debt servicing portion, and which component (whether or not such component actually compensates the Company for the cost of providing such capacity) is set forth in Annex 1 and shall be subject to indexation as provided in this Schedule 1.

"Reference Return on Equity Component" means the ROERef component, in Rs./kW/Month, payable to the Company for return on equity, which component shall be as set forth in Annex I.

"Reference Return on Equity During Construction Component" means the ROEDC_{Ref} component, in Rs./kW/Month, payable to the Company for return on equity during construction, which component shall be as set forth in Annex I.

"Reference Tariff" means the sum of the Reference Capacity Price and the Reference Energy Price as set forth in Annex I.

"Reference US-CPI" as provided in Annex IV.

"Reference Variable O&M Component" means the component, in Rs./kWh, payable to the Company for the variable costs of operation and maintenance that are attributable to the generation of Net Electrical Output, which component (whether or not such component actually compensates the Company for such costs of providing such Net Electrical Output) shall be as set forth in Annex I.

"Reference Water Use Charge Component" means the component, in Rs/kWh, payable to the Company for use of water for the generation of Net Electrical Output, which component shall be as set forth in Annex I.

"Return on Equity Component" has the meaning ascribed to "Return on Equity_M" in Section 5.1.

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"Return on Equity during Construction Component" has the meaning ascribed to "Return on Equity DC_M " in Section 5.1.

"Sales Tax" means sales tax levied under the Sales Tax Act 1990, as may be amended or superseded from time to time.

"Semiannual FX" means the average of each of the Exchange Rates in the Semiannual Period immediately preceding the relevant Semiannual Period, which shall equal the sum of the Exchange Rates in such immediately preceding Semiannual Period; divided by the number of such Exchange Rates.

"Semiannual Period" means each six (6) Month period of a Year, being 1 January through 30 June or 1 July through 31 December, as the case may be, and the period commencing on the Commercial Operations Date and ending immediately preceding the beginning of any such six (6) Month period.

"<u>Test Energy Payment</u>" means the Test Energy (PreCOD) Payment or the Test Energy (PostCOD) Payment pursuant to Section 8.7 of the Power Purchase Agreement, as the case may be.

"<u>Test Energy (PreCOD) Payment</u>" means the amount payable for Net Electrical Output under Sections 8.7(a) of the Power Purchase Agreement.

"Test Energy (PostCOD) Payment" means the amount payable to the Company for Net Electrical Output under Sections 8.7(b) of the Power Purchase Agreement.

"<u>US-CPI Adjustment Factor</u>" means the factor that is used to adjust the Reference Foreign Fixed O&M Component for fluctuations in US-CPI, which factor shall be calculated as specified in Part V.

"<u>US-CPI</u>" means the United States Consumer Price Index (All Urban Consumers), not seasonally adjusted, issued by US Bureau of Labor Statistics from time to time (or any successor or replacement agency thereto).

"Variable O&M Component" has the meaning as formulated for "VO&M_h" in Section 6.1.

"Water Use Charge Component" has the meaning as formulated for WUC_M in Section 6.1.

"Yearly CPI" means the average of each of the end of Month values for the CPI in the Year immediately preceding the relevant Year, which shall equal the sum of the Month end CPI values in the Year immediately preceding the Year divided by the number of such values; provided, that if any such values for any of such Year are not available, then the average of the end of Month values for the most recent available twelve (12) Months shall be used, unless directed by NEPRA to use any other months in lieu thereof.

3. Construction

3.1 This Schedule 1 (including the Annexes) shall be read in conjunction with and to be subject to Section 8.7 and Article IX of the Power Purchase Agreement. To the extent that any provision of this Schedule 1 is inconsistent with Section 8.7 or Article IX or any other article or section of the Power Purchase Agreement, the provisions of Section 8.7 or Article IX or the other relevant.

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article or section of the Power Purchase Agreement, as the case may be, shall prevail unless otherwise specified.

References to Parts, Articles, and Sections in this Schedule 1 are to Parts, Articles, and Sections of this Schedule 1, unless indicated otherwise. References to Tables and Annexes in this Schedule 1 are to the Tables and Annexes of this Schedule 1, unless indicated otherwise. References to Articles and Sections of the Power Purchase Agreement are to articles and sections contained in the body of the Power Purchase Agreement.



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PART II: TARIFF PAYMENT

4. Tariff Payment

From and after the Commercial Operations Date, the Power Purchaser shall for each Month pay to the Company a Capacity Payment and an Energy Payment that shall be calculated in accordance with Sections 5 and 6, respectively.

5. Monthly Capacity Payment

5.1 The Capacity Payment for the applicable Month shall be equal to the product of Capacity Price for the relevant month and the Tested Capacity prevailing in the relevant month, and shall be equal to:

Capacity Payment_M = Capacity Price_M * Tested Capacity_M

where,

Capacity Payment, in Rupees, payable for the

relevant Month M

Capacity Price M = the Capacity Price in Rs./kW/Month for the Month M

where,

Capacity Price_M = Non-Debt Comp_M + Debt Service Comp_M

where:

Non-Debt Comp_M = Fixed $O\&M_M + Insurance_M + Return on Equity_M + Insurance_M + In$

Return on Equity DC_M

where,

Fixed $O&M_M$ = Fixed $O&M(F)_M$ + Fixed $O&M(L)_M$

where:

Fixed $O&M(F)_M$ = Fixed $O&M(F)_{Ref} * FX$ adjust_q * US CPIadjust_q

where

Fixed $O\&M(F)_{Ref}$ = the Reference Foreign Fixed O&M Component, in

Rs/kW/month as per Annex I;

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and

the FX Adjustment Factor, as calculated in accordance FXadjust_a with Section 11.1, for the Quarter that includes Month M: and the US-CPI Adjustment Factor as calculated in US-CPIadjust, accordance with Section 11.7 for the Quarter that includes Month M. Fixed O&M (L)_M Fixed O&M (L)Ref * CPIadjustq where. Fixed O&M(L)Ref the Reference Local Fixed O&M Component in Rs/kW/month as per Annex I and CPIadjust_a the applicable Local Inflation Adjustment Factor, as calculated in accordance with Section 11.3 for the Quarter that includes Month M; INSADJ * FXadjusty Insurance_M where, the Reference Insurance Component in Rs/kW/Month as INSADI per Section 11.8 for the Agreement Year that includes Month M and the FX Adjustment Factor, as calculated in accordance FXadjust, with Section 11.3, for the Year that includes Month M Return on Equity_{Ref} * FXadjust_q Return on Equity_M where, Return on Equity_{Ref} the Reference Return on Equity Component as per Annex I

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FXadjust_q = the FX Adjustment Factor, as calculated in accordance with Section 11.1 for the Quarter that includes Month M

Return on EquityDC_M = Return on EquityDC $_{Ref}$ * FXadjust_q

where,

Return on EquityDC_{Ref} = the Reference Return on Equity During Construction as

per Annex I

and

FXadjust_q = the FX Adjustment Factor, as calculated in accordance

with Section 11.1, for the Quarter that includes Month M

Debt Service $Comp_M = Debt ServiceComp(F)_M$

where:

Debt ServiceComp $(F)_M$ = ForPrin $_M$ + ForInt $_M$

where,

 $ForPrin_M = ForPrin_{Ref} * FXadjust_s$

where:

ForPrin_{Ref} = the Reference Foreign Debt Principal as set out in

Annex-I

and

FXadjusts = the FX Adjustment Factor, as calculated in accordance

with section 11.2, for the Semiannual Period that

includes Month M

ForInt_M = ForInt(F)_{Ref} * FXadjust_s * FLIAFs

M

where,

ForInt(F)_{Ref} = the Reference Foreign Debt Interest for the Semiannual

Period that includes Month M as set out in Annex I

FXadjusts = the FX Adjustment Factor, as calculated in accordance

with section 11.2, for the Semiannual Period that

includes Month M

and

FLIAF, = the Foreign Loan Interest Adjustment Factor as

calculated in accordance with Section 11.5 applicable for

the Semiannual Period that includes Month M

Tested Capacity_M = the Tested Capacity, in kW, for the relevant Month M

and

M = the Month for which Capacity Payment is being

calculated.

5.2 Capacity Price shall be adjusted at the Commercial Operations Date as provided in Annex V hereof. Once adjusted at the Commercial Operations Date, the adjusted Reference Capacity Price shall be adjusted following such dates as provided in Part V herein.

6. Monthly Energy Payment

6.1 The Energy Payment for the relevant Month shall be calculated as follows:

Energy Payment_M = Energy Price_M \star NEO_M

where,

EnergyPrice_M = $WUC_M + Variable O&M_M$

where

 WUC_{M} = $WUC_{Ref} * CPIadjust_y$

Where

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WUC_{Ref} = the Reference Water Use Charge in Rs/kWh as set out in

Annex I

and

CPladjust, = the Local Inflation Adjustment Factor for CPI, as set out

in Section 11.5 for the Year that includes Month M

Variable $O&M_M$ = Variable $O&M_{Ref}$ * CPI adjust_q

where

Variable O&M_{Ref} = the Reference Variable O&M Component, as shown in

Annex I

and

CPIadjust_q = the Local Inflation Adjustment Factor for CPI, as set out

in Section 11.4 for the Quarter that includes Month M

NEO_M = The Net Electrical Output of the Complex, in kWh, for

relevant Month M;

and

M = the Month for which Energy Payment is being

calculated.

7. Liquidated Damages

7.1 Delay in Commissioning

In the event the Complex is not commissioned on or before the Required Commercial Operations Date, then the Company shall pay to the Power Purchaser, monthly in arrears, as liquidated damages (LDs) as calculated hercunder for delays in the occurrence of Commercial Operations Date beyond the Required Commercial Operations Date, at the rate of US\$ 2.50 per kW of the Contract Capacity per month prorated daily until the Commercial Operations Date:

 $LD_M = US$2.5 x Contract Capacity in MW x 1,000 X No. of Days of Number of days in the Month delay in a Month$

LD_M= liquidated damages due to delay in Commissioning in any Month.

7.2 Shortfall of Contract Capacity

Pursuant to Section 2.9 of the Power Purchase Agreement, in the event if the Tested Capacity at the time of Commissioning of the Complex on the Commercial Operations Date is less than the Contract Capacity, then the Company shall pay to the Power Purchaser liquidated damages (LDs) due to the capacity shortfall in comparison to the Contract Capacity as per the formula defined hereunder;

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LD_C = MW_{shortfall}* LD Rate

Where

MW_{shortfall} = (Contract Capacity minus initial Tested Capacity at COD) in MW

LD Rate is as follows:

- (a) if the MW_{shortfall} docs not exceed 2% of the Contract Capacity then US\$ 400,000 per MW;
- (b) if the $MW_{shortfall}$ exceeds 2% of but does not exceed 5% of the Contract Capacity then US\$ 500,000 per MW; and
- (c) if the MW_{shortfall} exceeds 5% of but does not exceed 10% of the Contract Capacity then US\$ 625,000 per MW.

7.3 Liquidated Damages after COD

Pursuant to Section 9.6 of the Power Purchase Agreement, the Company shall be liable to pay the liquidated damages in the relevant Month (LD_M) after Commercial Operations Date to the Power Purchaser which shall be the sum of liquidated damages for each hour (LD_h) in such relevant Month, as formulated hereunder, provided that LD_h for an hour shall be applicable and payable only if the Forced or Partial Forced Outage period allowed to the Company under Sections 5.6 (A) of the Power Purchase Agreement first have been exhausted in the relevant Agreement Year; provided, further that the Forced or Partial Forced Outage period shall be: (i) for the first Agreement Year, the product of the Tested Capacity and 200 hours; and (ii) after the first Agreement Year, the product of the Tested Capacity and the sum of 133 hours and fifty percent (50%) of the unutilized Scheduled Outage Hours at the end of immediately preceding Agreement Year.

 LD_{M} = $\sum_{h=1}^{n} LD_{h}$ Where

LD_M = Liquidated Damages in the relevant Month after COD pursuant to Section 9.6 of the PPA

n = number of hours in the relevant Agreement Year

and

 LD_h = 1.1 * CapacityPrice_h * FPFO_h

Where

CapacityPrice_h = CapacityPrice_M/HM

Where



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Capacity Price_M = Capacity Price, calculated in accordance with Section 5.1, for the month, or part month as the case may be, that

includes such hour h

and

 H_M = Total number of hours in such month, or part month, that includes such hour h

The Forced or Partial Forced Outage (as defined in Section 1.1 of the Power Purchase Agreement) in the relevant hour h, which shall be calculated as follows:

(i) If DNEO_h is equal to DAC_h then

 $\{\text{TestedCapacity}_h - (\text{NEO}_h * \text{TestedCapacity}_h / \text{RelevantHourCap}_h)\}$

Or

(ii) If DNEO_h is less than to DAC_h then,

 $\{\text{TestedCapacity}_h - (\text{NEO}_h * \text{TestedCapacity}_h / \text{DNEO}_h)\}$

Where

TestedCapacity_h = Tested Capacity expressed in kW

prevailing in such hour h

 $DNEO_h$ = Despatched Net Electrical Output for the

relevant hour h, converted into kW

NEO_h = Net Electrical Output in the relevant

hour h, converted into kW

RelevantHourCap_h = The capacity expressed in kW that could

have been delivered according to the actual Hydrological Conditions during

such relevant hour h

DAC_h = Declared Available Capacity expressed

in kW for the such hour h

The hour in which Forced or Partial Forced Outage (as defined in Section 1.1 of the Power Purchase

Agreement) occurs.

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PART III: SUPPLEMENTAL TARIFFS

- 8. Supplemental Tariff Payment for Pakistan Political Event or Change in Law
- 8.1 If, due to a PPFME or a CLFME, a Supplemental Tariff payment is due and payable to the Company from the Power Purchaser as provided in Sections 15.8(b) and 15.8(c) of the Power Purchase Agreement, the Power Purchaser shall, following the completion of the Restoration, pay to the Company the Supplemental Tariff payment, until the recoverable costs of a Restoration have been received in full by the Company from the Power Purchaser subject to NEPRA determination and notification by GOP. The Supplemental Tariff payment (which shall be structured to allow the Company to recover the reasonable and necessary costs of a Restoration net of insurance proceeds, if any, over the remainder of the Term, as provided in this Article 8) shall be calculated in accordance with Section 8.2. Each PPFME or CLFME, that may be unrelated to each other, may lead to a separate Supplemental Tariff payment.
- 8.2 The Supplemental Tariff payment for a Month M shall be calculated as follows:

STP _M		=	RRR _{fixed} * TestedCapacity _M
where:			
STP _M		=	the Supplemental Tariff payment for a Restoration in Rupees, for Month M ;
RRR_{fixed}		=	the Restoration recovery rate in Rs./kW/Month, which rate shall be calculated one time following the agreement by the Parties on the Restoration costs as determined by NEPRA, or as per the resolution of a dispute over such costs pursuant to Section 15.6(c) of the Power Purchase Agreement/GOP Implementation Agreement and shall remain fixed thereafter, and which rate shall be calculated as follows for the Month, M:
RRR _{fixed}		=	$R_t / TC_t * PJT_t$
	R,	=	the total cost of the Restoration as determined by NEPRA, or in accordance with Section 15.6 of the Power Purchase Agreement;
	TC _t	=	the then-prevailing Tested Capacity at time t, expressed in kW;
	PIT	=	the total number of months, including any part thereof, remaining in the Term from time t;





following the Day the Parties agree on Restoration costs to be recovered by the Company or as per the resolution of a dispute over such costs pursuant to Section 15.6 of the Power Purchase Agreement/GOP Implementation

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Agreement, the date that the Complex returns to operation or if the Complex did not cease operation, the date on which the Restoration is completed;

TestedCapacity_M = the Tested Capacity, in kW, for Month, M;

may submit an invoice to the Power Purchaser stated in Rupees for the Supplemental Tariff payment, inclusive payment is being calculated pursuant to this Section 8.2.

- 8.3 The Company shall be entitled to receive in accordance with Section 15.8(d) of the Power Purchase Agreement a return of LIBOR plus six and one-half percent (6.5%) per annum on the scheduled unpaid portion of the total cost of a Restoration through the period of cost recovery. The applicable LIBOR shall be the rate prevailing on the date that the Complex returns to operation or if the Complex did not cease operation, the date on which the Restoration is completed. Any delay in Supplemental Tariff payment invoice will attract Delayed Payment Rate until paid.
- 8.4 At any time after the first (1st) Business Day of each Month, of return thereon, for the previous Month, together with supporting information as may reasonably be necessary to substantiate the amounts claimed in the invoice.
- 8.5 The Power Purchaser may seek to verify the calculation of a Supplemental Tariff payment for a Restoration inclusive of return thereon, and may require the Company to provide to it copies of its calculations, with reasonable supporting information, which the Company shall provide within thirty (30) Days of such request. Within one (1) year following the commencement of such payments, the Power Purchaser shall have the right to engage, at its own cost, an independent auditor to audit and examine the costs claimed by the Company, and the Company shall make all of its relevant books and records available to the Power Purchaser and its auditors in connection with such audit or examination, provided however, if such Restoration cost is submitted to and approved by NEPRA, no such audit shall be conducted.

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PART IV: ADDITIONAL PAYMENTS

9. Payments for Net Electrical Output during Testing

Test Energy (PreCOD) Payment_M

- 9.1 For all Net Electrical Output delivered prior to COD the Power Purchaser shall pay to the Company a Test Energy (PreCOD) Payment that shall be calculated in accordance with this Section 9. Following COD the Power Purchaser shall pay to the Company a Test Energy (PostCOD) Payment that shall be calculated in accordance with this Section 9.
- Prior to COD the Test Energy (PreCOD) Payment shall be calculated Monthly in arrears pursuant to Section 8.7(a), of the Power Purchase Agreement. After COD, Test Energy (PostCOD) Payment shall be made pursuant to Section 8.7(b) of the Power Purchase Agreement for each Annual Capacity Test or other retest that shall be carried out pursuant to Section 8.4 of the Agreement following the completion of such test pursuant to Section 8.7(b) of the Power Purchase Agreement.
- 9.3 The Test Energy (PreCOD) Payment earned for a Month, or a part thereof, as the case may be, shall be calculated as follows:

where: Test Energy (PreCOD) the Test Energy (PreCOD) Payment, in Rupees, earned Payment_M for Month, M; the Water Use Charge Component for the Month, M, as WUC_M calculated in accordance with Section 6.1; the Variable O&M Component for the Month, M, as Variable O&M_M calculated in accordance with Section 6.1; the Net Electrical Output of the Complex, in kWh, for NEOM the Month M of the Pre COD period; The Month in the Pre COD period for which Test M Energy (Pre COD) Payment is being calculated.

 $(WUC_M + VO&M_M) * NEO_M$

9.4 The Test Energy (PostCOD) Payment earned during an Annual Capacity Test or retest shall be calculated in accordance with Section 6 of this Schedule.

10. Pass Through Item(s)

Pass-Through Items shall be payable by the Power Purchaser to the Company on the basis of the actual costs reasonably incurred by the Company to satisfy the requirements of the Power Purchase Agreement or to the extent that and at the time that the Company is obligated pursuant to the Laws of Pakistan to make payment for such Pass-Through Item(s).

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- 10.2 The Company may present an invoice(s) to the Power Purchaser for Pass-Through Items at any time on or after the first (1st) Day of the Month following the Month in which the cost(s) was incurred by the Company.
- 10.3 The following items shall be Pass-Through Items (the "Pass-Through Items"):
 - (a) No provision for income tax has been accounted for in the Reference Tariff. If the Company is obligated to pay any tax, the exact amount paid by the Company shall be reimbursed by the Power Purchaser on production of original receipts. This payment shall be considered as pass-through payment spread over a 12 months period in addition to fixed charges proposed (if any) in the Reference Tariff. Furthermore, in such a scenario, the Company shall also submit to the Power Purchaser details of any tax shield savings and the Power Purchaser will deduct the amount of these savings from its payment to the Company on account of taxation.
 - (b) Withholding tax on dividend is also a pass through item just like other taxes as indicated in the government guidelines for determination of tariff for new IPPs. Withholding tax shall be paid at the rate of 7.5% of the dividend declared on the Reference Return on Equity plus Reference Return on Equity DC. The Power Purchaser shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 17% return on equity and return on equity during construction according to the following formula:

Withholding Tax = [{17% x(E_(Ref.) - E_(Red.))}+Return on EquityDC_{Ref.}]x 7.5%

Payable

Where:

E_(Ref.) = The adjusted reference amount of equity at COD for the relevant year.

E_(Red.) = Equity redeemed, if any

Return on = The adjusted reference amount of return on equity during construction for the relevant year

In case the Company does not declare a dividend in a particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what is paid in that year and the total entitlement as per the net return on equity plus return on equity during construction) would be carried forward and accumulated so that the Company is able to recover the same as a Pass Through Item from the Power Purchaser in future on the basis of the total dividend payout.

- (c) Payments by the Company into the Workers' Welfare Fund and the Workers' Profit Participation Fund for its employees required to be paid in relation to the Project pursuant to the Laws of Pakistan.
- (d) Sales Tax, excise duty or other duty, levy, charge, surcharge or other governmental impositions (including without limitation, export tax, octrol, rawangi mahsool, etc.) wherever and whenever payable on the generation, sale, exportation, or supply of electricity or electricity generating capacity by the Company during the Term, provided

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that the Company has not been previously compensated for any such item by the Power Purchaser or the GOP.

- (e) Subject to the provisions of the Power Purchase Agreement, Costs incurred or suffered by the Company as a result of Change in Tax in accordance with Section 14.4 of the Power Purchase Agreement.
- (f) The cost of the Metering System if not procured by the Power Purchaser, as provided in Section 7.1(b) of the Power Purchase Agreement.
- (g) Subsequent to the initial approval of protective devices, the cost of any upgrade to such protective devices of the Complex required by the Power Purchaser pursuant to Section 6.6 of the Power Purchase Agreement.
- (h) The cost paid by the Company to procure and install more accurate or more reliable Water Meters requested by the Power Purchaser under Section 7.8(b) of the Power Purchase Agreement.
- (i) Additional cost of insurance payable pursuant to Section 12.1(b) and/or the cost and expenses payable pursuant to Section 14.5.
- (j) Any change in Water Use Charge beyond PKR 0.15 per KWh; and
- (k) Cost incurred or suffered by the Company for any change in Key Assumptions of Reference Tariff as provided in Annex VI; provided that the Power Purchaser may require the Company to provide all reasonable supporting information and or documentation to satisfy itself with regards to the Company's claim.

For the avoidance of doubt, if a particular type of Tax is stated to be a Pass-Through Item in this Section 10 then any change in Tax rate for such Tax upwards or downwards shall continue to be treated as a Pass-Through item.

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PART V INDEXATION AND ADJUSTMENT FACTORS

11 Indexation and Adjustment Factors

Indexations and adjustment factors shall be determined by NEPRA from time to time and notified in the official Gazette by GOP.

11.1 The FX Adjustment Factor for the relevant quarter will be calculated according to the following formula:

 $FXadjust_q = FXRate_{q-1} / FXRate_{Ref}$

where:

FXadjust_a = the FX Adjustment Factor applicable for the Quarter;

FXRate₀₋₁ = the Quarterly FX over the Quarter prior to the relevant Quarter;

and

FXRate_{Ref} = the Reference Exchange Rate.

11.2 The FX Adjustment Factor for the relevant Semiannual Period will be calculated according to the following formula:

 $FXadjusts = FXRate_{s-1} / FXRate_{Ref}$

where:

FXadjust_s = the FX Adjustment Factor applicable for the Semiannual Period;

FXRate_{s-1} = the Semiannual FX over the Semiannual Period prior to the

relevant Semiannual Period;

and

FXRate_{Ref} = the Reference Exchange Rate.

11.3 The FX Adjustment Factor for the relevant year will be calculated according to the following formula:

 $FXadjust_v = FXRate_{v-1} / FXRate_{Ref}$

where:

FXadjusty = the FX Adjustment Factor applicable for the year;

FXRate, = the Yearly FX over the year prior to the relevant year;

and

FXRate_{Ref} = the Reference Exchange Rate.



The Local Inflation Adjustment Factor will be calculated according to the following formula: 11.4

> CPI_{q-1}/CPI_{Ref} CPIadjust_q

where:

the Local Inflation Adjustment Factor applicable for the Quarter; CPIadjust_o

the relevant Quarterly CPI over the Quarter prior to the relevant CPI_{q-1}

Quarter; and

the Reference CPI **CPI**_{Ref}

The Local Inflation Adjustment Factor for Water Use Charge shall be calculated according to the 11.5 following formula:

> CPI_{y-1}/CPI_{Ref} CPIadjust,

where:

the Local Inflation Adjustment Factor applicable for the Year; CPIadjust,

the Yearly CPI for the relevant Year; and CPI_{v-1}

CPI_{Ref} the Reference CPI

The Reference Foreign Debt Interest Component shall be indexed by using the Foreign Loan 11.6 Interest Adjustment Factor (FLIAFs) as at the Commercial Operation Date and every 1st January and 1st July thereafter, where FLIAF will be calculated according to the following formula:

FLIAF_s =
$$\frac{\{LIBOR_t + 5.0\%\}}{\{LIBOR_{ref} + 5.0\%\}}$$

where:

FLIAF, the value of the Foreign Loan Interest Rate Adjustment Factor applicable for the Semiannual Period following the relevant

indexation date, "t";

the LIBOR on the Day immediately preceding the Commercial LIBOR,

Operations Date or 30th June or 31st December, as applicable;

The Reference LIBOR LIBOR_{ref}

T time on which such calculation was made



The US-CPI Adjustment Factor for US-CPI shall be calculated according to the following 11.7

US-CPI_{q-1}/US-CPI_{Ref} US-CPIadjust.

where:

the US-CPI Adjustment Factor for US-CPI applicable for the Quarter; US-CPIadjusta the Quarterly US-CPI over the Quarter prior to the Quarter; and US-CPI_{q-1}

the Reference US-CPI. US-CPIRef

The Insurance Component shall be adjusted annually for the actual premium paid subject to a cap 11.8 of 0.75% of the EPC Cost at Commercial Operation Date. The adjusted Insurance Component shall be calculated in accordance with the following formula:

(RIC/(0.65% of Reference EPC Cost in US\$)) * AP INSADJ

where:

the adjusted Insurance Component; INSADJ

the Reference Insurance Component, in Rs./kW/Month, given in Annex-I RIC

the actual premium in USD, for the relevant Agreement Year. ΑP

- At the beginning of each Quarter or Semiannual Period or Year, as the case may be, following the 11.9 Effective Date, the Company shall on the second (2nd) Business Day following the end of a Quarter or the Semiannual Period, as the case may be, deliver to the Power Purchaser the Current Indices and values. The Company shall also provide to the Power Purchaser reasonable supporting information, and the Company shall do so within ten (10) Business Days.
- If any index used herein ceases to be available, the Parties shall request NEPRA to determine an alternative index. Such determination when made available, shall be binding on the Parties for the purpose of such index hereunder. Pending the determination by NEPRA the last available value of such index shall be used for all relevant purposes hereunder Upon the determination of such index by NEPRA, either party(s) shall revise all payment made during the pendency of alternative index, and shall be paid without any interest to the owing party



Annex I – Reference Tariff Table

		Energy Pric	e (Rs/KWh)	Capacity Purchase Price - CPP (Rs./KW/Month)							
	Year	Water Use Charges	Var iable O&M	Fixed	0&M	Insurance	Return on Equity	ROEDC	Principal	Interest	Total Tariff
		Local	Local	Foreign	Locat	Foreign	Foreign	Foreign	Foreign	Foreign	Rs./kWh
	1	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267 .1510	1,263.7136	1,086.0899	11.0715
	2	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,332.2266	1,017.5770	11.0715
	3	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,404.4540	945.3496	11.0715
	4	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,480.5973	869.2063	11.0715
	5	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,560.8687	788.9349	11.0715
	6	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,645.4920	704.3115	11.0715
	7	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,734.7033	615.1003	11.0715
	8	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,828.7512	521.0523	11.0715
	9	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	1,927.8980	421.9056	11.0715
	10	0.1500	0.0441	190.3595	155,7487	132.6762	1,168.0420	267.1510	2,032.4201	317.3835	11.0715
	11	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	2,142.6089	207.1947	11.0715
	12	0.1500	0.0441	190.3595	155.7487	132.6762	1,168.0420	267.1510	2,258.7716	91.0320	11.0715
	13	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	_	-	5.2645
	14	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	-	-	5.2645
	15	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	-		5.2645
	16	0.1500	0.0441	190.3595	155,7487	132.6762	1,241 6011	267.1510	-	-	5 2645
	17	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	-	-	5.2645
	18	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	-	•	5.2645
	19	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	-	-	5.2645
	20	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	-	-	5 2645
	21	0.1500	0.0441	190.3595	155,7487	132.6762	1,241.6011	267.1510	•	-	5.2645
	22	0.1500	0.0441	190.3595	155.7487	132,6762	1,241.6011	267.1510	_	-	5.2645
	23	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267 1510	•	-	5.2645
	24	0.1500	0.0441	190.3595	155.7487	132,6762	1,241.6011	267.1510	-		5 2645
	25	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267,1510		-	5.2645
1	26	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510			5.2645
4	27	0.1500	0.0441	190.3595	155,7487	132.6762	1,241.6011	267.1510			5.2645
7	28	0.1500	0.0441	190.3595							
/	29				155.7487	132.6762	1,241.6011	267.1510	•	-	5 2645
		0.1500	0.0441	190.3595	155.7487	132,6762	1,241.6011	267.1510	-		5.2645
	30	0.1500	0.0441	190.3595	155.7487	132.6762	1,241.6011	267.1510	1170.0016	-	5.2645
	Levelized Tariff	0.1500	0.0441	190.3595	155.7487	132.6762	1,188.4332	267.1510	1170.0016	528,416	9.4612

NEPRA AUTHORITY A

Levelized Tariff | 0.1500 | 0.0441 | 190.3595 | 155.7487 | 132.6762 | 1,188.4332 | 267.1510 | 1170.0016 |

Levelized Tariff (1-30 years) discounted at 10% p.a. = US Cents 9.0241at Reference exchange rate of USD 1 = PKR 104.85

ANNEX II - Debt Schedul	A	N	NEX	Π-	D	eht	S	che	dul	ŧ
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	Foreign					Annual Annual	Annual Debt	Annual	Annual	Annual Debt	
Year	Principal Million \$	Repayment Million S	Mark-up Million S	Balance Million S	Debt Service Million S	Principal Repayment Million US\$	Interest Million US\$	Servicing Million US\$	Principal Repayment Rs./kW/M	Interest Rs./kW/M	Servicing Rs./kW/M
	238.2204	7.2060	6.3724	231.0144	13,5784				1		
1	231.0144	7.3988	6.1796	223.6156	13.5784	14 6048	12.5520	27.1569	1,263.7136	1,086.0899	2,349.8035
1	223.6156	7.5967	5.9817	216.0188	13.5784						
2	216.0188	7.7999	5.7785	208.2189	13.5784	15.3967	11.7602	27.1569	1,332.2266	1,017.5770	2,349 8035
	208.2189	8.0086	5.5699	200.2103	13.5784						
3	200.2103	8.2228	5.3556	191.9875	13.5784	16.2314	10.9255	27.1569	1,404.4540	945.3496	2,349.8035
	191.9875	8.4428	5.1357	183.5448	13.5784						
4	183.5448	8.6686	4.9098	174.8761	13.5784	17.1114	10.0455	27.1569	1,480.5972	869.2063	2,349.8035
	174.8761	8.9005	4.6779	165.9756	13.5784						
5	165.9756	9.1386	4.4398	156.8371	13.5784	18.0391	9.1178	27.1569	1,560.8686	788.9349	2,349 8035
	156.8371	9.3830	4.1954	147.4540	13.5784			-			
6	147.4540	9.6340	3.9444	137.8200	13.5784	19.0171	8.1398	27.1569	1,645.4920	704.3115	2,349.8035
	137.8200	9.8918	3.6867	127.9282	13.5784						
7	127.9282	10.1564	3.4221	117.7719	13.5784	20.0481	7.1088	27.1569	1,734.7033	615 1003	2,349 8035
	117.7719	10.4280	3.1504	107.3438	13.5784						
8	107.3438	10.7070	2.8714	96.6368	13.5784	21.1350	6.0218	27.1569	1,828.7512	521.0523	2,349.8035
	96.6368	10.9934	2.5850	85.6434	13.5784						
9	85.6434	11.2875	2.2910	74.3560	13.5784	22.2809	4.8760	27.1569	1,927.8980	421.9056	2,349.8035
10	74.3560	11.5894	1.9890	62.7665	13.5784						\



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Power Purchase Agreement ~ Schedules 1 - 9

	62.7665	11.8994	1.6790	50.8671	13.5784	23.4888	3.6680	27.1569	2,032.4201	317.3835	2,349.8035
	50.8671	12.2177	1.3607	38.6494	13.5784						
11	38.6494	12.5446	1.0339	26.1048	13.5784	24.7623	2.3946	27.1569	2,142.6089	207.1947	2,349.8035
	26.1048	12.8801	0.6983	13.2247	13.5784						
12	13.2247	13.2247	0.3538	-	13.5784	26.1048	1.0521	27.1569	2,258.7716	91.0320	2,349.8035





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ANNEX III NOT USED



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Annex IV Key Assumptions of Reference Tariff

- 1. NTDC will be responsible for procuring, financing, constructing, operating and maintenance of the Power Purchaser's Interconnection Works, Metering System and the Power Purchaser transmission facilities at the Site.
- 2. No withholding tax on supply of plant and equipment is assumed. Only 6% tax on the Construction Contract and other local services contract has been assumed.
- 3. The customs duties, taxes and cess are estimated numbers. As per NEPRA's previous tariff rulings, adjustment will be allowed in accordance with the actual expenses incurred in this behalf.
- 4. Interconnection with the Power Purchaser's transmission system at 132 kV is assumed. In case the interconnection is required at a higher voltage by the Power Purchaser, the additional cost will be made part of the Reference Project Cost and will be reflected in the tariff at the time of COD.
- 5. All debt financing in this Schedule has been taken as foreign debt. However, if local debt financing is raised during construction, such debt components shall be reflected in the tariff on COD and appropriate changes shall be made in this Schedule.
- 6. The Reference Water Use Charge is Rs. 0.15 per kWh
- 7. The Reference US-CPI is the US-CPI for the month of January 2015, which is 233.707.
- 8. The Reference Consumer Price Index is the CPI for the month of January 2015, which is 196.95, provided however that Reference CPI for Water Use Charge shall be the CPI of the latest available month preceding the date of COD.
- 9. The Reference Exchange Rate used is Rs. 104.85 except the Reference Exchange Rate for adjustments in Foreign Fixed O&M Component and Insurance during operation, which shall be Rs. 101.0.
- 10. The Reference LIBOR is 0.35%.
- 11. Hydrological risk shall be borne by the Power Purchaser.
- 12. The benefit of carbon credits, if obtained by the Company, shall be shared between the Parties as per the policy thereon by the GOP.
- 13. No tax has been assumed on the Interest/return/rentals, fees, and mark-up or any other sum (including without limitation income from compensation amounts represented by the letter "a" set forth in Schedule 2 of the GOP Implementation Agreement and Schedule 2 of the AJ&K Implementation Agreement) payable to Foreign Lenders under the Financing Documents in computation of Reference Tariff.
- 14. If the O&M Contractor is;
 - (i) an AJ&K subsidiary of a foreign company, the income/corporate tax will be payable by such subsidiary on the income at the rate of thirty five (35%) on net profit basis; or
 - (ii) a AJ&K branch of a foreign company, it shall pay income tax on its profits derived from the O&M Agreement at the rate of thirty five (35%) on net profit basis or may opt for tax payment at the rate of fifteen (15%) of the gross receipts subject to later option being exercised within period of 15 days of commencement of O&M Agreement.





15. Reference Project Cost

Item	Amount (USD million)			
Civil works cost	150.202			
Electrical & Mechanical works	84.214			
Architectural works	1.484			
Reference EPC Cost	235.90			
Custom Duty	3.6			
Insurance During Construction	4.718			
Feasibility & Technical Studies	2.000			
Project Advisors & Agents	4.727			
Administration	7.240			
Owners Engineer	9.000			
Engineering & Design Cost	9.100			
Management Supervision	3.000			
Re-opener Verifier /Independent Engineer	0.360			
O&M mobilization cost	2.240			
Lenders' Financing Fees & Charges	6.468			
Environmental Costs	1.610			
Resettlement & Rehabilitation Costs	3.960			
Interest During Construction	23.704			
Total Project Cost (the "Reference Project Cost")	317.627			

16. Financing Plan

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Source of Financing	US\$ million
Total Project Cost	317.627
Debt (75%)	238.220
Equity (25%)	79.407

17. Debt Financing Structure

Item	Amount (US\$ million)	%age of Project Cost		
Foreign Debt (US\$)	238.220	75.0%		
Local Debt (US\$)	0.00	0.0%		
Total Debt	238.220	75.0%		

18. Reference Equity and Debt Drawdown Schedule

Timing	Equity (%age)	Foreign Debt (%age)	Local Debt (%age)
1 st Year	0.00%	-	-
2 nd Year	0.00%	-	-
3 rd Year	0.00%	•	-
4 th Year	20.00%	20.00%	_





Timing	Equity (%age)	Foreign Debt (%age)	Local Debt (%age)
1 st Year	0.00%	_	-
2 nd Year	0.00%		•
3 rd Year	0.00%	-	
5 th Year	15.00%	15.00%	
6 th Year	30.00%	30.00%	-
7th Year	35.00%	35.00%	
Total	100.00%	100.00%	





ANNEX V Adjustments on Commercial Operation Date

1. One Time Adjustment in Reference EPC Cost for Civil Works cost escalation

- 1.1 The cost of civil works will be adjusted due to variation in the prices/indices of a selected number of cost elements. The following formula ("Cost Escalation Formula"), calculates the amount of escalation allowed in the relevant month "n" of the construction period.
 - a) $P_n = V_n * [(C_n C_o)/C_o] + W_n * [(S_n S_o)/S_o] + Y_n * [(F_n F_o)/F_o] + Z_n * [(L_n L_o)/L_o]$

b) $T_{in}=T_n+P_n$

Where

P_n is the amount of escalation allowed in the relevant month "n" of the construction period;

 V_n , W_n , Y_n and Z_n represent the reference Rupce amount, on which the escalation shall be calculated, of Coment, Steel, Fuel and Labour respectively in the relevant month "n" of the construction period, as shown in table 1 below.

C, S, F and L are the unit price indices for Cement, Steel, Fuel and Labour, where the subscript "n" refers to the relevant month "n" and the subscript "o" refers to the base date of February 2014. The sources of indices for cement, steel, labour and fuel shall be as follows:

For labour (L), the index shall be the wages applicable for the "Mason (raj)" for the city of "Rawalpindi" as given under Intercity Consumer Prices, presently in Table 7.11, of the Monthly Bulletin of Statistics, published by the Pakistan Bureau of Statistics, Statistics Division, Government of Pakistan. The base index value (Lo) shall be 900 (as shown for February 2014 in the aforementioned table). For cement (C), the cost index shall be the index number applicable to "Cement" as given under Index Numbers of Wholesales Prices by Commodities - Other Transportable Goods, presently in Table 7.9, of the Monthly Bulletin of Statistics, published by the Pakistan Bureau of Statistics, Statistics Division, Government of Pakistan. The base index value (Co) shall be 207.30 (as shown for February 2014 in the aforementioned table).

For fuel (F), the index shall be the index number applicable to "Diesel Oil" as given under Index Number of Wholesale Prices by Commodities - Other Transportable Goods, presently in Table 7.9, of the Monthly Bulletin of Statistics, published by the Statistics Division, Pakistan Bureau of Statistics, Government of Pakistan. The base index value (Fo) shall be 279.46 (as shown for February 2014 in the aforementioned table).

For steel (S), the cost index shall be the index number applicable to "Steel Bars & Sheets" as given under Index Numbers of Wholesales Prices by Commodities - Metal Product, Machinery & Equip, presently in Table 7.9, of the Monthly Bulletin of Statistics, published by the Statistics Division, Pakistan Bureau of Statistics, Government of Pakistan. The base index value (So) shall be 139.12 (as shown for February 2014 in the aforementioned table).

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Tfn is the Total Final Amount for the relevant month n, after adding the Escalated Amount (Pn) to the Total Reference Amount (Tn) as provided in Table 1.

Tn is the Total Reference Amount for the relevant month "n" from Construction Start Date as given in Table 1.

- 1.2 The EPC Cost shall form the basis for determination of the total project cost at Commercial Operations Date and at such time the relevant components of Reference Tariff shall be adjusted accordingly.
- 1.3 The Company shall have the flexibility to finance difference between EPC Cost and Reference EPC Cost through the combination of any of the debt financing options available at that time. However, the terms of such additional financing shall be comparable with the terms of financing already approved for the Project.
- 1.4 The Company shall have the flexibility to adjust the payment schedule given in Table 1, while remaining entitled to the escalation in the civil works cost as per Table 1, provided that escalation in civil works cost will continue to be calculated on the basis of reference payment schedule at Table 1 irrespective of the actual payment pattern and no escalation in civil works cost will be allowed beyond earlier of the Commercial Operation Date or the Required Commercial Operation Date.
- 1.5 The Company shall submit to the Power Purchaser the relevant documents, formulae and invoices to give effect aforesaid adjustments applicable by that time, three (3) Months prior to the earlier of the Commercial Operation Date or the Required Commercial Operations Date, subject to minor adjustments to be effected at Commercial Operations Date.
- 2. Adjustments due to variation in Customs Duties

Custom Duty, along with other duties and allied provincial charges on the import of plant and equipment, amounting to USD 3.6 million has been taken as reference. The Company shall be allowed adjustment in the Reference Project Cost and Reference Tariff due to any variation on account of actual payment of custom and other duties through provision of documentary evidence at Commercial Operations Date.

3. Adjustment due to variation in withholding Tax

The Withholding Tax at the rate of 6% on Construction Contract and local services has been included in the Reference Project Cost. Any variation on account of actual applicable withholding tax rate shall be adjusted in the Reference Project Cost and Reference Tariff at the time of Commercial Operations Date.

4. Adjustment due to variation in the "Interest During Construction"

Any variation in the Interest during Construction from the reference amount of USD 23.704 million on account of variation in LIBOR and/or KIBOR and actual timing and quantum of debt drawdown allowed during the Project construction period of 48 months, starting from the date of Financial Closing; will be allowed through an adjustment in Reference Project Cost and Reference Tariff at Commercial Operations Date. However no adjustment of actual amount of Interest During Construction beyond Required Commercial Operations Date will be allowed.

5. Adjustment in Return On Equity During Construction (ROEDC)

The ROEDC shall be adjusted at Commercial Operations Date based on actual timing and approved amount of equity injected during the construction period against the reference amount





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of USD 3.087 million. However, no adjustment of actual amount of ROEDC beyond Required Commercial Operations Date will be allowed.

6. Adjustments due to variation in US\$/Rupee parity

Actual variation in US\$/Rupee parity for payments made in foreign currency will be allowed through an adjustment in total Reference Project Cost and Reference Tariff; provided that no such adjustment shall be allowed after the earlier of Commercial Operation Date or the Required Commercial Operations Date. For the purposes of such adjustment, the Company shall provide the Power Purchaser the payment schedule along with the exchange rate prevalent on the date of particular transaction and other supporting documents. The relevant component of the Reference Tariff set out in Annex I shall be revised on the Commercial Operations Date to incorporate the variation related to changes in the US\$/Rupee rate during construction period.

7. Adjustment in due to variation in Land Acquisition and Resettlement costs

Reference Project Cost will be adjusted on Commercial Operations Date with the actual land acquisition and resettlement costs (including but not limited to land acquisition cost, house and structures compensation, livelihood restoration, family packages, infrastructure improvement/restoration, land improvements including construction of dykes and drainage channels, water drainage and pumping system, replacement cost of facilities, structures and trees, restoration of access (through bridges or other means) or other activities directly related with the land acquisition or resettlement) incurred by the Company. The relevant component of the Reference Tariff set out in Annex I shall be revised at the Commercial Operations Date to incorporate the variation related to changes in the cost of land acquisition and resettlement on provision of documentary evidence to the Power Purchaser.

8. Adjustment due to variation in Insurance During Construction cost

The reference cost of insurance during construction is US\$ 4.718 million being 2.0% of the aggregate Reference EPC Cost and such insurance cost will be adjusted at Commercial Operations Date on the basis of actual subject to the maximum of 2.0% of the aggregate EPC Cost (including Customs Duty).

9. Adjustment for Electrical & Mechanical costs under EPC Cost

The cost of electrical & mechanical works shall be adjusted at COD on the basis of actual subject to the maximum of US\$ 3.0 million over the reference approved cost of US\$ 84.214 million on production of verifiable documentary evidence to the satisfaction of Power Purchaser.

10. Adjustment in Principal Repayment & Cost of Debt

The Reference Foreign Debt Principal and Reference Foreign Debt Interest shall be adjusted at COD as per actual borrowing composition and variation in LIBOR at the relevant date during the Project construction period.

11. Adjustment of Finance Charges

Finance Charges shall be adjusted at COD on the basis of actual subject to a maximum cap of 3% of the total debt allowed (excluding the impact of Interest During Construction and financial charges) on production of documentary evidence.

12. Adjustment in the cost of Tunneling Works due to Geological Conditions

a. Subject to the verification of the Re-opener Verifier, cost variation due to geological conditions related to tunneling works (Head Race Tunnel) will be allowed at Commercial





Operation Date. However, the maximum amount of variation on this account shall be restricted to Rs. 104.85 million.

- b. The cost of the Head Race Tunnel shall be allowed to vary depending on the category of rock encountered during construction of Head Race Tunnel. The increase or decrease in the cost shall be subject to the baseline conditions given in Table 2 of this Annex.
- c. In each month of construction of Head Race Tunnel, the actual length of tunneling works for each rock type shall be measured. The actual cost of tunneling works, for each month of such construction, shall be calculated by multiplying the length of excavation of each rock type by its corresponding unit rate given in Table 3.
 - i. The unit rates shall not vary during the construction phase.
 - ii. On Commercial Operation Date, the EPC Cost shall be adjusted to reflect the actual cost of tunneling works.
 - iii. The criteria for Category I, II, III, IV and V is given in Table 4 of this Annex.

iv. The RMR values shall be calculated using Table 5 of this Annex.





TABLE -1

			Amoun	ts (PKR)	(PKR)			Coefficients						
Month	Fixed	Cement	Steel	Fuel	Labour	Total	Fixed	Cement	Steel	Fuel	Labor			
	PKR	PKR	PKR	PKR	PKR	PKR	a	b	c	d	е	Total		
1	472,610,907	4,420,548	3,809,588	21,520,757	9,838,213	512,200,013	0.92	0.01	0.01	0.04	0.02	1.00		
2	98,437,957	10,734,440	9,250,844	52,258,972	23,890,188	194,572,401	0.50	0.06	0.05	0.27	0.12	1.00		
3	113,718,235	12,400,720	10,686,829	60,371,002	27,598,601	224,775,387	0.50	0.06	0.05	0.27	0.12	1.00		
4	162,171,120	17,684,399	15,240,256	86,093,782	39,357,769	320,547,326	0 50	0.06	0.05	0.27	0,12	1.00		
5	165,601,686	18,058,494	15,562,649	87.915,009	40,190,343	327,328,181	0 50	0.06	0.05	0.27	0.12	1.00		
6	217,633,212	23,732,416	20,452,384	115,537,627	52,818,022	430,173,661	0.50	0.06	0.05	0 27	0.12	1.00		
7	211,196,472	26,645,268	32,740,969	108,899,543	56,386,576	435,868,828	0.48	0.06	0.08	0.25	0.13	1.00		
8	222,621,701	30,060,021	41,550,764	113,032,436	62,237,821	469,502,743	0.48	0.06	0.09	0.24	0.13	1.00		
9	213,613,320	29,077,677	40,704,189	108,250,045	60,051,551	451,696,782	0.47	0.07	0.09	0.24	0.13	1.00		
10	247,835,852	45,347,321	56,900,324	114,672,410	78,425,380	543,181,287	0.46	0.08	0.11	0.21	0.14	1.00		
11	221,134,236	49,703,183	61,749,798	93,707,463	77,494,979	503,789,659	0.44	0.10	0.12	0.19	0.15	1.00		
12	644,705,491	48,776,067	60,950,818	89,193,939	75,431,623	919,057,938	0.70	0.05	0.07	0.10	80.0	1.00		
13	188,176,204	42,665,131	48,770,329	79,432,835	63,962,526	423,007,025	0.44	0.10	0.12	0.19	0.15	1.00		
14	154,065,100	34,533,864	29,696.404	59,570,022	49,311,449	327,176,839	0.47	0.11	0.09	0.18	0.15	1.00		
15	106,947,279	29,746,495	25,531,921	33,045,191	38,610,061	233,880,947	0.46	0.13	0.11	0.14	0.16	1.00		
16	139,071,806	46,235,703	39,813,155	31,610,179	5 2,075, 5 52	308,806,395	0.45	0.15	0.13	0 10	0.17	1.00		
17	117,962,843	37,799,899	32,494,098	25,697,197	43,685,594	257,639,631	0.46	0.14	0.13	0.10	0.17	1.00		
18	119,295,547	37,799,899	32,494,098	25,697,197	43,685,594	258,972,335	0.46	0.14	0.13	0.10	0.17	1.00		
19	119,295,547	37,799,899	32,494,098	25,697,197	43,685,594	258,972,335	0.46	0.14	0.13	0.10	0.17	1.00		
20	117,488,274	37,427,458	32,192,517	25,493,154	42,880,096	255,481,499	0.46	0.15	0.12	0.10	0.17	1.00		
21	110,525,722	35,937,693	30,986,193	24,676,982	39,658,107	241,784,697	0.46	0.15	0.13	0.10	0.16	1.00		
22	129,819,766	39,913,793	34,205,804	26,855,299	48,257,416	279,052,078	0.47	0.14	0.12	0.10	0.17	1.00		
23	129,606,834	39,869,913	34,170,273	26,831,259	48,162,514	278,640,793	0.47	0.14	0.12	0.10	0.17	1.00		
24	129,819,766	39,913,793	34,205,804	26,855,299	48,257,416	279,052,078	0.47	0.14	0.12	0.10	0.17	1.00		



TOTAL	8,146,542,502	1,606,594,000	1,789,600,000	2,196,651,250	2,164,905,600	15,904,293,352	51.22%	10.10%	11.25%	13.81%	13.61%	100.00%
48	-	•	•	-	-	-	-	-	-	_	-	-
47	-	-	-	-	-	-		-	_	-	-	_
46	-	-	_	-	1	-	-	-	-	-	-	~
45	37,180,331	2,472,310	2,130,614	12,036,059	5,502,286	59,321,600	0.63	0.04	0.04	0.20	0.09	1.00
44	58,825,489	6,793,567	12,229,029	19,501,819	13,219,792	110,569,696	0.53	0.06	0.11	0.18	0.12	1.00
43	112,534,990	33,806,409	39,989,570	28,640,940	38,622,793	253,594,702	0.45	0.13	0.16	0.11	0.15	1.00
42	144,027,548	41,521,008	50,342,183	35,746.025	48,012,108	319,648,872	0.45	0.13	0.16	0.11	0.15	1.00
41	161,624,681	41,521,008	50,342,183	35,746,025	48,012,108	337,246,005	0.48	0.12	0.15	0.11	0.14	1 00
40	174,111,625	39,930,225	46,412,939	33,448,422	45,234,162	339,137,373	0.51	0.12	0.14	0.10	0.13	1.00
39	176,216,141	37,914,226	41,433,410	30,536,673	41,713,671	327,814,121	0.54	0.11	0.13	0.09	0.13	1.00
38	192,011,216	39,436,657	45,193,823	32,735,552	44,372,256	353,749,504	0.54	0.11	0.13	0.09	0.13	1.00
37	201,079,043	39,436,657	45,193,823	32,735,552	44,372,256	362,817,331	0.55	0.11	0.13	0.09	0.12	1.00
36	212,291,017	41,720,303	50,834,443	36,033,870	48,360,131	389,239,764	0.55	0.11	0.13	0.09	0.12	1.00
35	223,438,949	41,720,303	50,834,443	36,033,870	48,360,131	400,387,696	0.56	0.10	0.13	0.09	0.12	1.00
34	231,930,576	44,003,949	56,475,063	39,332,189	52,348,006	424,089,783	0.55	0.11	0.13	0.09	0 12	1.00
33	195,659,268	44,003,949	56,475,063	39,332,189	52,348,006	387,818,475	0.50	0.11	0 15	0.10	0.14	1.00
32	219,318,537	49,004,544	65,207,295	44,327,230	62,025,951	439,883,557	0.50	0.11	0.15	0.10	0.14	1 00
31	229,332,803	50,550,395	67,416,993	45,569,968	65,145,667	458,015,826	0.50	0.11	0.15	0.10	0.14	1 00
30	201,802,346	50,175,643	66,089,210	44,781,213	64,596,304	427,444,716	0.47	0.12	0.15	0.11	0.15	1.00
29	202,310,965	51,080,801	66,874,543	45,415,674	65,496,544	431,178,527	0.47	0.12	0.15	0.11	0.15	1.00
28	185,327,712	46,513,510	55,593,303	38,819,037	57,520,794	383,774,356	0.48	0.12	015	0.10	0.15	1.00
27	159,937,797	46,513,510	55,593,303	38,819,037	57,520,794	358,384,441	0.45	0.13	0.15	0.11	0.16	1.00
26	140,777,954	41,934,508	45,087,421	32,700,470	49,314,476	309,814,829	0.45	0.13	0.15	0.11	0.16	1.00
25	133,448,637	40,256,424	43,197,240	31,444,640	46,854,379	295,201,320	0.45	0.14	0.14	0.11	0.16	1.00

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(Exchange Rate: 1 USD = 104.85 PKR)

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TABLE 2

Rock Classification		Quantity (meter)	Unit Rate (PKR/meter)	Cost of Construction	
				in PKR according to EPC contract	
Horizontal	Class III	37.00	1,164,846.66	43,099,326	
Honzontal	Class IV	12.00	1,398,865.01	16,786,380	
	Class V	•	2,675,772.00	-	
	Bend	39.27	2,153,718.32	84,576,519	
	Class IV (Inlet)	21.00	2,881,857.17	60,519,001	
Vertical	Class III	29.30	476,870.68	13,972,311	
	Class IV	162.00	585,610.55	94,868,909	
	Class V	-	1,167,452.33	-	
	Class ill (Outlet)	20.00	830,752.76	16,615,055	
	Total	320.57		330,437,501	

(Exchange Rate: 1 USD = 104.85 PKR)



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TABLE 3

Monthly Payment Schedule of Tunneling Works

Rock Classification			Class	s III	Class (V	Class V	*	Bend	Class	Class III (Outlet)		Class IV (Inlet)	
Vertical		Rate /meter)	1,164,	846.66	1,398,865.01	2,675,772.00	2,153,718.32		2,153,718.32 -		2,88	1,857.17	
Horizontal		Rate /meter)	476,	870.68	585,610.55	1,167,452.33		-		830,752.76			
Month after Commence		Ler	Length (m)			Amount (PKR)							
ment Date	ClassIII	Class∮(V	Bend	Class III (Outlet	Class IV	Total	Classili	Class IV	Bend	Class III (Outlet)	Class IV (Inlet)	Total	
18 (Vertical)	-	2.50	-		- 10.50	13.00	*	3,497,163	_	-	30,259,500	33,756,563	
19 (Vertical)	18.50	3.50	19.64		-	(41):64	21,549,663	4,896,028	42,288,259	*	-	68,733,950	
20 (Honzontal)	29 30	60,70	-	20.00	-	110 00	13,972,311	35,546, 560	***	16,615,055	-	66,133,927	
21 (Horizontal)	•	101.30	*			101.30	-	59,322, 349	-	-	**	59,322,349	
22 (Vertical)	18.50	6.00	8.64	-	10.50	43.64	21,549,663	8,393,190	18,597,358	-	30,259,500	78,799,711	
23 (Vertical)	-	-	11.00		-	11 00	: -	-	23,690,902	-	-	23,690,902	
Total	66.30	174 00	39 27	20 00	21.00	320 57	57,071,637	111,655,289	84,576,519	16,615,055	60,519,001	330,437,501	







TABLE -4

Division	Class I	Class II	Class III	Class IV	Class V
RMR Value	100 ~ 81	80 ~ 61	60 ~ 41	40~21	< 20

TABLE -5

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Pa	rameter		Ranges of values									
	Strength of	Point load strength index	>10 MPa	4-10 MPa	2-4 MPa	1-2MPa	For this low range uniaxial compressive test is preferred		1			
1	intact rock material	uniaxíal compressive strength	>250MPa	100-250 MPa	50-100 MPa	25-50 MPa	5-25 MPa	1-5 MPa	<1 MPa			
	Rating		15	12	7	4	2	1	0			
	RQD (%)		90-100%	75-90%	50-75%	25-50%	< 25%					
2	Rating		20	17	13	8	3					
	Spacing of jo	ints	>2m	0.6-2m	0.20.6m	60-200mm	<60mm					
3	Rating		20	15	10	8	5					
		Persistence(m)	lm <	1-3m	3-10m	10-20m	> 20m					
		Rating	6	4	2	I	0					
4	joints	Aperture(mm)	No separation	<0.1mm	0.1-1.0mm	1-5mm	> 5mm					
		Rating	6	5	4	1	0	***************************************				
1		Roughness	Very rough	Rough	Slightly rough	Smooth	Slickenside					

		Rating	6	5	3	1	0
		Infilling(gauge)	None	Hard materia	al	Soft materia	
		mmining(gauge)	None	<5mm	>5mm	<5mm	>5mm
		Rating	6	4	2	2	0
		Wall rock Weathering	Unweath- ered	Slightly weathered	Moderately weathered		Decomposed
		Rating	6	5	3	1	0
		Inflow per 10m tunnel lengths	None	<10€/min	19- 25 ℓ/mi n	25- 1 25 ℓ/min	>125 <i>t</i> /min
(§	Ground- Water	Ratio(joint water pressure/major principal stress)	0	<0.1	0.1-0.2	0.2-0.5	>0.5
		General conditions	Completely Dry	Damp	Wet	Dripping	Flowing
	Rating		15	10	7	4	0
6	Strike & dip of joints Rating(Tunnel)		Very favorable	Favorable	Fair	Unfavorable	Very unfavorable
			0	-2	-5	-10	-12

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