

**POWER PURCHASE AGREEMENT**

**BETWEEN**

**KARNATAKA POWER CORPORATION LIMITED**

**AND**

**BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED**

**MANGALORE ELECTRICITY SUPPLY COMPANY LIMITED**

**HUBLI ELECTRICITY SUPPLY COMPANY LIMITED**

**GULBARGA ELECTRICITY SUPPLY COMPANY LIMITED**

**CHAMUNDESHWARI ELECTRICITY SUPPLY CORPORATION LIMITED**

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*Power Purchase Agreement - BTPS*

This power purchase agreement dated ..... is by and between

1. BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED, a Government of Karnataka undertaking having its registered office at K.R.Circle, BANGALORE – 560001,
2. MANGALORE ELECTRICITY SUPPLY COMPANY LIMITED, a Government of Karnataka undertaking having its registered office at Paradigm plaza, A.B.Shetty circle, MANGALORE – 575101.
3. HUBLI ELECTRICITY SUPPLY COMPANY LIMITED, a Government of Karnataka undertaking having its registered office at Navanagar, HUBLI- 580 025,
4. GULBARGA ELECTRICITY SUPPLY COMPANY LIMITED, a Government of Karnataka undertaking having its registered office at Railway Station Main Road, GULBURGA – 585102,
5. CHAMUNDESHWARI ELECTRICITY SUPPLY CORPORATION LIMITED, a Government of Karnataka undertaking having its registered office at no.927, L.J.Avenue, New Kantharaj Urs Road, Saraswathipuram, MYSORE.

(herein after referred as “ BUYERS “ which expression shall , unless repugnant to the context or meaning thereof, include its successors, permitted assigns and legal representatives) represented by their Managing Directors on the ONE PART, and

THE KARNATAKA POWER CORPORATION LIMITED, a Government of Karnataka undertaking with its registered office located at No.82, Shakthi Bhavan, Race Course Road, Bangalore – 560001(herein after referred as “ SELLER “ which expression shall , unless repugnant to the context or meaning thereof, include its successors, permitted assigns and legal representatives) represented by their Managing Director on the OTHER PART.

**RECITALS**

**WHEREAS**

- (i) the seller is engaged in the business of investigation, design, construction, operation and maintenance of power generating stations in Karnataka State;
- (ii) the Buyers are engaged at present in the business of distribution and supply of power to consumers in Karnataka State.
- (iii) WHEREAS the Government of Karnataka in its order no. DE 186 PPC 97, Bangalore dated 30.04.1998 has granted permission to KPCL to take up the construction, maintenance and operation of 1x 500 MW capacity coal fired Thermal Power Station (herein after referred as “the Unit”) at Kudatini Village, Bellary District, Karnataka State.

WHEREAS the Seller has offered to sell electricity generated by the Unit to the Buyers and the Buyers have agreed to purchase the same as per the terms and conditions set out herein. It is hereby agreed by and between the parties as follows.

**ARTICLE 1**

**1.1 Definitions:** In this agreement the following words and expressions shall have the respective meanings set forth below.

**“Act” or “Electricity Act 2003”** means the Electricity Act 2003 or any amendments made to the same or any succeeding enactment there of.

**"Acknowledgement date"** means the date on which receipt of a Tariff Invoice or a Supplementary Invoice is acknowledged by the Designated Officers of the Buyers.

**“Additional Capital Expenditure”** means the Capital Expenditure actually incurred after the Date of Commercial Operation of the generating station and admitted by the commission after prudence check subject to provisions of article 4.

**“Adjusted recoverable fixed charges”** means for any Tariff period, an amount equal to the product of (i) the Recoverable fixed charges for such Tariff period and (ii) the Fixed charge adjustment factor determined as at the end of the last Billing month for such period.

**"Affected party"** means the party claiming “Force majeure”.

**"Agreement"** means this Power Purchase Agreement dated as of the date hereof, including annexures, exhibits and enclosures, as the same may be amended, supplemented or modified from time to time in accordance with the terms and conditions hereof

**“Area Load Desptch Centre” or “ALDC”** means relevant Area Load Dispatch Centre as defined in the Electricity Laws in the Area where the Buyer’s registered office is located and wherever established.

**“Auxiliary Consumption”** in relation to a period means the quantum of energy consumed by auxiliary equipment of the generating station and transformer losses with in the generating station (with in the plant boundary vide annexure 1(a) and 1(b) i.e. Maralihalla raw water pump house) and shall be expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station at 7.50% on gross generation at the end of each tariff period

**“Availability”** in relation to the unit for any period means the average of the Declared Capacities for all the time blocks during the period expressed as a percentage of the Installed Capacity of the unit minus normative Auxiliary consumption in MW, and shall be computed in accordance with the following formula:

$$\text{Availability} = 10000 \times \frac{\sum_{i=1}^N DC_i}{\{N \times IC \times (100 - \text{AUX}_n)\}} \%$$

where.

IC = Installed Capacity of the unit in MW,

DC<sub>i</sub> = Declared capacity for the i<sup>th</sup> time block of the period in MW,

N = Number of time blocks during the period, and

AUX<sub>n</sub> = Normative Auxiliary Energy Consumption as a percentage of gross generation;

**“Availability Based Tariff” or “ABT”** shall mean all the regulations contained in the Central Electricity Regulatory Commission (terms and conditions of Tariff ) Regulations 2004, as amended or revised from time to time.

**"Billing month"** means the period between 00.00Hrs of the first day of any calendar month to 24.00Hrs of the last day of the same month. The first billing month shall be starting from the Commercial Operation date.

**"Business day"** means any day on which commercial banks are not authorized or not required by law to remain closed in the State of Karnataka.

**“Business hours”** means the period commencing from 0930 hours to 1700 hours on any Business day.

**“Capital expenditure”** means the actual expenditure incurred by the generating company, as per the original scope of the project up to the first financial year closing after one year of the date of commercial operation of the unit as admitted by the KERC for determination of tariff.

**“CERC”** means Central Electricity Regulatory Commission.

**“Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulation, 2004”** means the Tariff regulations notified under section 178 (s) of the Electricity Act, 2003 which includes the modifications, amendments and successor regulations notified by CERC from time to time.

**"Change in law"** means any of the following events occurring after the Effective date as a result of, or in connection with, any action or inaction by any Legal authority:

- i) a change in or repeal of an existing law;
- ii) an enactment or making of a new law;
- iii) cancellation or non-renewal or change in the conditions applicable to any legal approval relating to the Unit;
- iv) a change in the manner in which a law is applied or interpreted from the manner in which such law was applied or interpreted on the Effective date;
- v) any change in, or other alteration in taxes, royalty, depreciation.

**"Check meters"** means special energy meter(s) to measure and record energy and various parameters as required under availability based tariff (ABT) regime relating to dispatch of Electricity to the Buyers and drawl of start-up power from the jurisdictional distribution licensee and shall be used for accounting and billing of electricity in case of failure of Main Meter.

**“Commercial Operation Date” or “COD”** means, in relation to a Unit, the date one day after the date when each of the Buyers receives a Final Test Certificate of the Independent Engineer as per the provisions of Article 2.A.5.2 and in relation to the Power Station shall mean the date by which such Final Test Certificates as per Article 2.A.5.2 are received by the Buyers for all the Units.

**"Contracted Capacity"** means the capacity of the unit at 462.50 MW (Installed capacity of the unit excluding auxiliary consumption).

**“Contract Year”** means the period beginning on the date of this agreement and ending on the immediately succeeding March 31 and thereafter each period of 12 months beginning on April 1 and ending on March 31 provided that

- (i) in the financial year in which Scheduled COD of the first Unit would have occurred, a contract year shall end on the date immediately before the Scheduled COD of the first Unit and a new Contract Year shall begin once again from the Scheduled Commercial Operation Date of the first Unit and end on immediately succeeding March 31 and provided further that
- (ii) the last Contract Year of this Agreement shall end on the last day of the term of this Agreement.

**“Control Centre” or “Nodal Agency”** means the SLDC or ALDC or such other load control center designated by Buyers from time to time through which the Buyers shall issue Dispatch Instructions to the Seller for the Power Station.

**“Core Business”** means the regulated activities of generation of electricity of the generating station and does not include any other business of activity, like consultancy, telecommunication, of the seller.

**"Debt"** means the amount that is the sum of loans, notes, bonds, debentures, lease or other obligations (including credit facilities offered by contractors and suppliers) provided under the auspices of any legal entity (collectively "obligations") contracted or raised and received by the Seller under the finance procurements and that are expended on the Project where under the terms of such obligations interest is payable at periodic intervals at rates specified by those terms and the principal amount of such obligations is repayable or redeemable at periodic intervals or in lump-sum at the end of the tenure of the obligations as specified in the Financing Documents, including without limitation any such obligations, that are by the terms thereof, convertible into equity, except that liability for such payment of interest or repayment of loan shall cease to form part thereof to the extent and from the time of such conversion or conversions into equity.

**“Declared capacity”** means the capability of the generating station to deliver ex-bus electricity in MW declared by such generating station in relation to any time block of the day or time blocks of the whole of the day, duly taking into account the availability of fuel.

**"Default Rate"** means a per annum interest rate of interest equal to 15%.

**“Depreciation”** means the allowance for each Contract Year as described in sub-section 4.3 (b) iii.

**“Designated Officer”** shall mean an officer nominated by the Buyers or Seller for matters relating to billing and payment as set out in Article 6.

**“Dispatch instruction”** means any instruction issued by the Buyers through the respective SLDC or ALDC to the Seller, in accordance with applicable Grid Code and this agreement in Article 3.4.

**"Due date of payment"** shall mean thirty days reckoned from the Acknowledgement date, including the Acknowledgement date.

**“Effective date”** means the later of the date of execution and delivery of this Agreement or the date on which each of the conditions precedent set forth in Article 2A is satisfied which in no case shall be greater than 3 years from the execution of this agreement.

**"Electricity"** means electrical energy supplied by the Unit at the Interconnection Point and shall have meaning as ascribed in Annexure II

**"Emergency"** means a condition or situation which (i) in the reasonable judgment of the Buyers affects or will affect their ability to meet their obligations, to maintain safe, adequate and continuous electric service to their customers or presents an imminent physical threat of danger to life, health or property, or (ii) affects the Buyers's System and which adversely affects the Seller's ability to deliver electric energy (including voltage and frequency fluctuations and damage or failure of the transmission system), or (iii) in the reasonable judgment of the Seller affects or will affect their ability to meet their obligations, to maintain safe, adequate and continuous service or presents an imminent physical threat of danger to life, health or property.

**“Energy charges”** shall have the meaning specified in Article-4.4.

**“Equity”** shall mean the amount of capital in Indian Rupees invested by the Seller for funding the Capital Expenditure as detailed in Annexure III and for funding Additional Capital Expenditure during the tariff period.

The premium raised by the seller while issuing share capital and investment of internal resources created out of free reserve of the seller, if any, for the funding of the project, shall also be reckoned as a paid up capital for the purpose of computing return of equity, provided such premium amount and internal resources or actually utilized for meeting the capital expenditure of the generating station and forms part of the approved financial package.

However, the overall limit of the equity for calculating the return shall be limited to 30% of the sum of capital expenditure and additional capital expenditure.

If the equity employed is more than 30%, the balance amount shall be considered as a normative loan.

If the equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.

For the purpose of calculation of return, it excludes any amount of owner's capital or additions thereon used in financing the working capital requirement of the Seller's business.

**“Estimated recoverable fixed charges”** shall have the meaning ascribed in Article 6.1.

**“Facility”** means the new coal fired electric generating facility to be built, owned and operated by the Seller, consisting of one Unit of capacity of 500 MW (gross), auxiliary equipment, the Interconnection Facilities and the Common Facilities as more specifically defined in Annexure XIII.

**“Final Test Certificate”** means

- (a) a certificate of the Independent Engineer certifying and accepting the results of a Commissioning Test/s in accordance with Article 2.A.5.2.1 of this Agreement ; or
- (b) a certificate of the independent Engineer certifying the result of a Repeat Performance Tests in accordance with Article 3.6 of this Agreement;

**"Financing documents"** means the agreements and documents between the seller and the Financing Parties relating to the long term financing (including refinancing and short term loans) of the design, development, construction, commissioning, renovation, modernization and/or up-rating works of Project (which may include asset leasing arrangements), provided such agreements and documents are in agreement with the Buyers and are consistent with the Financial Package Approval or such other approval by the KERC.

**"Financial Closing Date"** The date on which all the Financing Documents have been signed and delivered by the parties thereto providing binding commitments for the financing of the Facility, which in no case shall be after one year from the date of execution of this agreement.

**"Fixed charge adjustment factor" or "FCAF"** means for a Tariff period, the quotient (rounded to the nearest 1/10,000th and expressed as a decimal) obtained by dividing (i) the scheduled generation of the Unit for such Tariff period by (ii) the Target generation of the Unit for such period. The FCAF calculated for any Tariff period shall not exceed 1.0.

**"Force majeure"** shall have the meaning set forth in Article 10 hereof.

**"Forced outage"** means any interruption of the generating capability of the Unit in part or in full, not resulting from

- i) a Scheduled outage;
- ii) an event of Force majeure;
- iii) an event or condition caused by the Buyers or attributable to the Buyers's System; and
- iv) any Emergency or other curtailments to comply with the Dispatch instruction of the Buyers.

**"Fuel"** means primary fuel used to generate electricity namely, Coal.

**"Fuel Supply Agreements"** means all Agreement/s related to supply of Fuel.

**"GoI"** means the Government of India.

**"GoK"** means the Government of Karnataka.

**"Governmental Instrumentality"** means GoK or any state or other political subdivision of GoI, any ministry, department, agency, body or corporation (statutory or otherwise), authority, commission inspectorate, or regional or municipal authority of GOI, GOK or of any political or other subdivision thereof.

**"Grid Code"** means any set of regulations or codes including **"IEGC"** issued by CERC/KERC as amended and revised from time to time and legally binding on the Seller and the Buyers governing the operation of the Grid System or any succeeding set of regulations or code.

**"Grid System"** means Interconnection and Transmission Facilities and any other Transmission or Distribution facilities through which the Buyers supply electricity to their customers or the Transmission Company transmits electricity to the Buyers.

**"Gross calorific value"** means, in respect of Primary fuel or Secondary fuel, for the purpose of calculating Energy charges for each Billing month, the weighted average gross calorific content of one kilogram of Primary fuel, or one Liter of Secondary fuel received at the Unit for a particular Billing month, determined on the basis of the sampling and analysis procedures set out in Annex-VII.

**“Gross Generation”** means the quantum of energy generated as measured at the generator terminals.

**“Gross Station Heat Rate”** means the heat energy input in Kcal required to generate one Kwh of electrical energy at generator terminals, shall equal to **2450** kcal/kwh at all times.

**“Gross Installed Capacity”** means 1 x 500 MW.

**"Incentive payment"** shall have the meaning as ascribed in Article 4.5.

**“Independent Engineer”** means **Central Power Research Institute (CPRI)** an Independent consulting Engineering firm to carry out the functions in accordance with Article 2.A.5.1 and Article 3.6 herein.

**“Installed Capacity”** means the name plate capacity of the generating unit or the capacity of the generating station (reckoned at the generator terminals).

**"Interconnection point"** means the point or points at which interconnection is made between the Unit and the Buyers/ Transmission Utility's System and unless otherwise mutually decided, shall be at the outgoing sides of circuit breakers connecting the EHT / HT lines.

**“KERA”** means the Karnataka Electricity Reforms Act, 1999.

**“KERC”** means the Karnataka Electricity Regulatory Commission established under the KERA.

**"kw"** means kilowatt.

**"kwh"** means kilowatt hour.

**"Law"** means any valid act, law, legislation, statute, rule, regulation, notification, directive, order, bye-law, ruling, or any interpretation thereof enacted, issued, promulgated by any Legal Authority.

**"Legal Authority"** means GoI, GoK, KEREC, Governmental Instrumentality, authority, legislative body, commission or any regional authority thereof under the direct or indirect control of the GoI or GoK.

**"Lender"** means any Indian or foreign institution, corporation, partnership, firm, individual or organization which has provided or will provide Debt.

**"Letter of credit"** shall have the meaning set forth in Article 6.8 hereof.

**"Main meters"** means recording meter(s), which would primarily be used to measure and record energy and various parameters as required under Availability Based Tariff (ABT) regime relating to dispatch of Electricity to the Buyers for accounting and billing of electricity and drawl of start-up power from the Buyers.

**“Maximum Continuous Rating (MCR)”** means in relation to a Unit, the maximum continuous output at the generator terminals guaranteed by the manufacturer at reference condition and specified site conditions.

"**Meter reading date**" for any Billing month, means 12:00 hours of the first day of each calendar month.

"**Monthly fixed charge amount**" means the Estimated recoverable fixed charge for a Tariff period divided by the number of months in such Tariff period.

"**MU**" means million kwh.

"**MW**" means 1000 kW.

"**Net metered energy**" means Electricity as measured pursuant to Article 5.1.

"**Plant Boundary**" means the geographical limits of the plant as illustrated in Annexure IA & IB.

"**Plant Load Factor**" or "**PLF**" for a given period means the **Declared Capacity or Declared Energy** during the period, expressed as a percentage of energy corresponding to installed capacity in that period and shall be computed in accordance with the formula:

$$\text{Plant Load Factor} = 10000 \times \sum_{i=1}^N \text{SG}_i / \{ N \times \text{IC} \times (100 - \text{Aux Con}) \} \%$$

i=1 to N

Where,

IC= Installed capacity of the generating station in MW.

SG<sub>i</sub> = Scheduled generation in MW for the i<sup>th</sup> time block of the period.

N = Number of time blocks during the period and

AUX<sub>n</sub> = Normative Auxiliary Energy consumption as a percentage of gross generation.

"**Primary fuel**" shall mean bituminous and/or semi-bituminous coal. The characteristics of primary fuel is as per Annexure-VIII.

"**Project Cost**" shall mean the cost of the project incurred as per Article 4 and shall comprise a maximum of 30% equity and a minimum of 70% debt components.

"**Prudent utility practices**" means those practices, methods, techniques and standards, as changed from time to time that are generally accepted for use in electric utility industries internationally taking into conditions obtaining in India, and commonly used in prudent electric utility engineering and operations to design, engineer, construct, test operate and maintain any project lawfully, safely, efficiently and economically as applicable to power station of the size, service and type of the project, and that generally conforms to the operation and maintenance guidelines of the manufacturers/suppliers.

"**Regional Load Despatch Centre**" means the centre established under sub section (I) of section 27 of Electricity Act 2003.

"**Rupee or Rs.**" means the Indian rupee, the lawful currency of the Republic of India.

"**Recoverable fixed charges**" means the fixed charges which the Seller is entitled to recover in a Tariff period, as more fully described in Articles 4 and 6.

"**Scheduled generation**" at any time or for any period or time block means schedule of generation in Mega watt ex - bus given by the State Load Despatch Centre.

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“**Scheduled Energy**” means the energy corresponding to the schedule of generation for any period or time block in Mega Watt Ex-bus given by the State Load Despatch Center.

“**Scheduled outage**” means a planned interruption of the generating capability of the Unit in part or in full, with a start and duration determined pursuant to Article 3.

“**Secondary fuel**” shall mean Light Diesel Oil (LDO) and/or Heavy Furnace Oil (HFO). The characteristics of secondary fuel is as per Annexure-IX.

“**SRPC**” means Southern Region Power Committee

“**Standby Meter**” means a Meter connected to CT and PT other than those used for Main Meter and Check Meter and shall be used for accounting and billing of electricity in case of failure of both Main Meter and Check Meter;

“**State Load dispatch Centre or SLDC**” means the Control Center located at Bangalore, Karnataka State from which the Buyers shall dispatch the facility.

"**Supplementary Invoice**" shall have the meaning set forth in Article 6.4(b) hereof.

“**Target Availability (TA)**” means for recovery of full fixed charges at 80% availability.

"**Tariff invoice**" shall have the meaning set forth in Article 6 hereof.

"**Tariff payment**" shall have the meaning ascribed thereto in Article 6 hereof.

"**Tariff period**" means the period commencing from the commercial operation date and ending with the last day of the financial year immediately thereafter and every period of one year subsequently, during the Term of this agreement.

“**Taxes**” means any tax, charge, impost, tariff, duty or fee or any kind of charge, imposed or levied upon the Seller, directly or indirectly, by any Legal authority in India, including income tax, minimum alternative tax, service tax, value added tax, sales tax, stamp duty, import duty, tax on foreign currency loans or foreign exchange transactions, excise duty, property tax, registration fee or license, octroi, entry tax, water tax, sanitary cess or tax, electricity tax or environmental, energy or fuel tax (including any fee or charge imposed or assessed on the basis of the carbon or heat content of fuel).

“**Tax on income**” shall have the meaning ascribed thereto in Article 4.8 hereof.

“**Tax Escrow Mechanism**” shall have the meaning ascribed thereto in article 4.9 hereof.

"**Technical Limits**" means the limits and constraints set forth in Annexure IV.

“**Term**” shall have the meaning ascribed to it in Article 2 hereof.

“**Tested capacity**” means nett capacity as measured at the interconnection point.

**“Transmission Improvements”** means the transmission lines and other equipments to be constructed and installed to evacuate the power generated by the Seller and to be sold to the Buyers. This can be constructed in stages to receive Electricity from the facility.

**“Transmission Utility”** means State Transmission Utility (KPTCL) or Central Transmission Utility (PGCIL) as defined in Electricity Act, 2003.

**“Unit”** means steam generator, turbine generator and auxiliaries of the generating station.

**“Unscheduled Interchange”(UI)** means the variation between actual generation or actual drawal and scheduled generation or scheduled drawal.

**“Week”** means a calendar week commencing from 00.00hours of Monday, and ending at 24.00hours of the following Sunday;

## **1.2 Interpretation**

(a) Unless otherwise stated, all references made in this Agreement to "Articles" shall refer to Articles of this Agreement. The Annexes to this Agreement form a part of this Agreement and will be of full force and effect as though they were expressly set out in the body of this Agreement.

(b) In this Agreement, unless the context otherwise requires (i) the singular shall include plural and vice versa; (ii) words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other legal entities; (iii) the words "include" and "including" are to be construed without limitation and (iv) a reference to any party includes that party's successors and permitted assigns.

(c) Any undefined terms will have the same meaning as in the Electricity Act, 2003 or Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulation, 2004 or Indian Electricity Grid Code.

**ARTICLE 2**

**TERM OF AGREEMENT**

2.1 (a) This Agreement shall come into force from the Effective date and unless earlier terminated in accordance with terms thereof, shall be in effect from the Commercial Operation Date until the completion of twenty five years.

(b) Either party may request an extension of the Term. Such request shall be made in writing not less than two years before the scheduled expiry of the Term. Within a reasonable time after such a request is made, the Parties shall enter into good faith negotiations regarding whether such an extension shall be effected and the terms and conditions thereof. If the Parties agree for extending the Term, the validity of this Agreement shall be renewed for such period, on such mutually agreed terms and conditions and as approved by the KERC.

(c) Notwithstanding the above, either Party may request for any change in the terms and conditions of this Agreement as approved by KERC. Upon which both the Parties shall enter into good faith negotiations regarding the changes to be effected. If the Parties so agree, the Agreement shall stand modified to that extent.

**ARTICLE 2A**

**CONDITIONS PRECEDENT:**

**2.A.1 Conditions Precedent to the Buyers Obligations:**

The obligations of the Buyers to commence the purchase of electricity from the Unit at the rates specified in Article 4 are contingent upon compliance of the following conditions, in each case in form and substance reasonably satisfactory to the Buyers;

receipt by the Buyers of evidence that the Seller has complied with all requirements of Article 2.A to the extent compliance is required before the Synchronization Date, for which evidence shall be received on or before the date occurring 90 days prior to the Commercial Operation Date;

**2.A.2 Conditions Precedent to the Seller's Obligations:**

The obligations of the Seller under this Agreement are contingent upon compliance of the following conditions;

(i) the Seller shall have obtained all necessary Legal Approvals required for the construction, execution and operation of the Unit, and any other Legal Approvals otherwise necessary for the Seller to perform its obligations under implementation contracts, either unconditionally or subject to conditions which do not materially adversely affect the Seller, including its ability to perform its obligations under each of the Contracts with a condition that the Seller has made his best efforts to obtain the Legal Approvals in time;

**2.A.3 PRE-OPERATION PERIOD**

**2.A.3.1 Permits and Approvals:** The Seller shall, at its expense, (I) obtain and maintain in effect, from the appropriate Legal Authority, all Legal Approvals required for the Unit and (I) complete all environmental impact studies required under any Law. The Buyer shall, at its expense, (I) obtain and maintain in effect, from the appropriate Legal Authority, all Legal Approvals required by law to be procured by the Buyer for the Transmission Improvements and (ii) secure written financing commitments for the construction of the Transmission Improvements.

**2.A.3.2 Financing and Construction Schedule:** The Seller shall submit for the Buyers perusal (I) a construction schedule for the Unit on effective date and (ii) a start-up and test schedule for the Unit 90 days prior to start-up and testing of the Unit. Thereafter the Seller shall submit progress reports once in a month, three months in advance, from the Synchronization Date and shall notify the Buyers of any material changes to the construction schedule in a timely manner. The Seller shall allow the Buyers to make physical inspections of the Unit on the request of the Buyers during and after completion of construction of the Unit. The Buyers technical review and inspection of the Unit shall not be construed as endorsing the design thereof nor as any warranty of the safety, durability or reliability of the Unit.

**2.A.3.3 Equipment:**

**2.A.3.3 (I) Equipment:** the Seller shall provide the Buyers with generator manufacturer's capability curves, relay types, and proposed relay settings, metering arrangements as mentioned in appendix within 120 days before the synchronization date for review and comment by the Buyers. Within 30 days of receiving such materials, the Buyers shall inform the Seller, in writing, as to whether the proposed relay types and relay settings, and metering arrangements are

acceptable. If these are not found to be acceptable to the Buyers, the Seller agrees to comply with all reasonable requests of the Buyers to provide acceptable relay types and relay settings that are compatible with the Buyers System and consistent with Prudent Utility Practices. All information must be submitted in a manner reasonably acceptable to the Buyers, particularly the generator data, which shall be used for the Buyers inspections and transient stability analysis.

**2.A.3.3 (II) Construction Power:** Construction Power shall be provided within 3 months of application by the Seller to jurisdictional Office and compliance of all required Buyers formalities as per Buyers supply regulations. The Construction Power shall be charged as at the Tariff as notified by the Commission from time to time.

**2.A.3.4 Procedures:** The Parties shall mutually develop written procedures no later than 120 days prior to the Commercial Operation Date which will be intended as a guide on how to integrate the Unit and the output thereof into the Buyers System. The procedures will be mutually agreed upon based on the design of the Unit and the design of the Interconnection Facilities. Topics covered in such procedures shall include the method of day-to-day communications, key personnel lists for both Unit and Buyers operating centers, clearances and switching practices, outage scheduling, daily capacity and energy reports, Unit operations log, performance and testing specifications of the Unit, including generator reactive capability curves.

**2.A.3.5 Synchronization:**

(i) The seller shall give the Buyers and SLDC at least Forty Five (45) days preliminary written notice and at least thirty (30) days advance final written notice of the date on which it intends to synchronize the Unit to the grid system.

(ii). If the Buyers shall reasonably object to such proposed Synchronization Date, then the Parties shall agree on a Synchronization Date which shall be as close as practicable to the date proposed by the Seller, but in no event any later than 15 days after the proposed Synchronization Date. The Buyers shall have the right to have representatives present at the Unit during synchronization and testing.

(iii) Subject to (i) above, the Unit may be synchronized by the seller to the grid system when it meets all connection conditions prescribed in any Grid Code then in effect and otherwise meets all other Indian legal requirements for synchronization to the Grid System.

**2.A.3.6 Electricity Generated Prior to Commercial Operation Date (Infir Power):** Any electricity generated prior to Commercial Operation Date shall be construed to be for the purpose of testing, commissioning, synchronization and start-up. For generation of such electrical energy before Commercial Operation Date, the Buyers shall reimburse only the fuel charges incurred by the Seller on the basis of actual fuel consumption.

**2.A.4 Commissioning Test (Initial Capacity Test)**

- (i) Prior to or on the Commercial Operation Date, the Independent Engineer shall establish the Installed Capacity in accordance with the procedures and capacity adjustment curves for temperature and relative humidity, set forth in Annexure VI. A unit shall be commissioned on the day after the date when all the Buyers receive a final Test Certificate of the of the Independent Engineer stating that:
  - (a) the Commissioning tests have been in accordance with the Schedule VI and are acceptable to him; and

(b) the results of the Performance Test show that the Unit's tested capacity is not less than ninety eight (98) percent of its Contracted Capacity as existing on the Effective Date.

(iii) The Seller shall give the Buyers at least 15 days prior notice of the performance of the initial capacity tests pursuant to Article 2.A. The Buyers shall be entitled to monitor and witness all such tests. The Seller shall bear the costs and expenses of such tests and the Buyers shall be responsible for any costs or expenses incurred by it in connection with monitoring or witnessing such tests.

#### **2.A.5. Commissioning**

##### **2.A.5.1 Commissioning:**

- (i) The Seller shall use all reasonable efforts to cause the Commercial Operation Date to occur on or before the date set forth below ("Commercial Operation Date"). Commercial Operation Date will be the end of March 2008 (ii) If the Commercial Operation Date does not occur on or before the end of March 2008, then the Seller shall pay to the Buyers a liquidated damages of Rs.1.225 Crores Per month until the actual Commercial Operation Date, subject to a maximum liquidated damages for 6 months (180 days) of such delay. The Seller shall pay the Buyers this liquidated damages pursuant to this Section, if any, within 21 days of Commercial Operation Date in respect of which such delay has occurred or within 200 days of the completion of the end of March 2008 whichever is earlier.
- (ii) The Seller shall be responsible for ensuring that the Unit is Commissioned in accordance with the Schedule VI at its own cost, risk and expense.
- (iii) The seller shall give the Buyers and the independent Engineer not less than ten (10) days prior written notice of Commissioning Test of the Unit.
- (iv) The Seller, Buyers and the Independent Engineer shall each designate qualified and authorized representatives to witness and monitor Commissioning Test of the Unit.
- (v) Testing and measuring procedures applied during the each Commissioning test shall be in accordance with the codes, practices, and procedures mentioned in the schedule VI of this agreement.
- (vi) Within Five (5) days of a Commissioning Test, the Seller shall provide the Buyers and the Independent Engineer with the copies of the detailed Commissioning Test results. Within Five (5) days of receipt of the Commissioning Test results, the Independent Engineer shall provide to the Buyers and the Seller in writing, his findings from the evaluation of Commissioning test results, either in the form of Final Test Certificate certifying the matters specified in 2.A.5.2.1 or the reasons for non-issuance of the Final Test Certificate.

## **2.A.5.2 Commercial Operation**

- 2.A.5.2.1** A unit shall be commissioned on the day after the date when all the Buyers receive a final Test Certificate of the of the Independent Engineer stating that:
- (a) the Commissioning tests have been in accordance with the Schedule VI and are acceptable to him; and
  - (b) the results of the Performance Test show that the Unit's tested capacity is not less than ninety eight (98) percent of it's Contracted Capacity as existing on the Effective Date.
- 2.A.5.2.2** If the Unit fails a Commissioning Test, the Seller may retake the relevant test within a reasonable period after the end of the previous test with three (3)day's prior written notice to the Buyers and the Independent Engineer. Provided however the Buyers shall have a right to require deferment of any such retests for a period not exceeding fifteen (15) days without incurring any liability for such deferment, if the Buyers are unable to provide evacuation of power to be generated, due to the reasons outside the reasonable control of the Buyers or due to inadequate demand in the Grid.
- 2.A.5.2.3** The Seller may retake the Performance test by giving at least fifteen (15) days advance notice in writing to the Buyers, up to eight (8) times, during a period of one hundred and eighty (180) days from the Unit's COD in order to demonstrate an increased tested capacity over and above as provided in 2.A.5.1 (b). Provided however, the Buyers shall have the right to require deferment of any such retests for a period not exceeding fifteen (15) days, without incurring any liability for such deferment, if the Buyers are unable to provide evacuation of power to be generated, due to the reasons outside the reasonable control of the Buyers or due to inadequate demand in the Grid.
- 2.A.5.2.4** (i) If the Unit's Tested Capacity after the most recent Performance Test mentioned in Article 2.A.5.2.3 has been conducted, is less than it's Contracted Capacity as existing on the Effective date, the Unit shall be de-rated with the following consequences in each case with effect from the date of completion of such most recent test:
- (a) the Unit's Contracted Capacity shall be reduced to it's Tested Capacity, as existing at the most recent performance test referred to in Article 2.A.5.2.3 and Capacity Charges shall be paid with respect to such reduced Contracted capacity in proportion.
  - (b) the Seller shall not be permitted to declare the Availability of the Unit at a level greater than it's tested Capacity.
  - (c) the Availability Factor of the de-rated Unit shall be calculated by reference to the reduced Contracted Capacity; and
  - (d) the Capital Cost and each element of the Capital Structure Schedule shall be reduced in proportion to the reduction in the Contracted Capacity of the Power station as a result of that de-rating.

(ii) If at the end of initial Performance re-test Period or the date of the eighth Performance Test mentioned in Article 2.A.5.2.3, whichever is earlier, the tested capacity is less than Contracted Capacity, the consequences mentioned in Article 3.5 shall apply for a period of one year. Provided that such consequences shall apply with respect to the Tested Capacity existing at the end of Initial Performance Retest Period or the date of eighth Performance Test mentioned in Article 2.A.5.2.3 whichever is earlier.

**2.A.5.2.5** If the Unit's Tested Capacity as at the end of the Initial Performance Retest Period or the date of eighth Performance Test mentioned in Article 2.A.5.2.3, whichever is earlier, is found to be more than it's Contracted Capacity as existing on the Effective Date, the tested Capacity shall be deemed to be the Unit's Contracted Capacity if the Buyers agree and intimates the same to the Seller within thirty (30) days of receipt of the results of the last Performance Test to purchase such excess Tested Capacity for payments in respect of such excess Tested Capacity agreed to be purchased by such Buyers. In case the Buyers decide not to purchase such excess Tested Capacity, the Seller shall be free to sell such excess Tested Capacity to any third party and the Unit's Contracted Capacity shall remain unchanged, notwithstanding that the Tested capacity exceeded the Contracted Capacity.

Provided that in all the above events, the Seller shall be liable to obtain/maintain all the necessary consents, Permits and approvals including those required under the environmental laws for generation of such excess Tested Capacity.

### **2.A.5.3 Costs Incurred**

The Seller expressly agrees that all costs incurred by him in synchronizing, connecting, Commissioning and /or testing or re-testing a unit shall be solely and completely to his account.

**ARTICLE 2 B**

**ALLOCATION OF POWER GENERATED FROM THE FACILITY TO DIFFERENT COMPANIES.**

Not later than forty five days prior to the Commercial Operation Date, Government of Karnataka shall allocate power from the Facility totaling to the Contracted capacity among the Buyers. The capacity so allocated shall remain firm for each of the Buyers unless the Government of Karnataka changes it at a future date by means of a notification.

### **ARTICLE 3**

#### **SALE AND PURCHASE OF ELECTRICITY**

##### **3.1 SALE AND PURCHASE OF ELECTRICITY**

Subject to the provisions of this Agreement, the Seller shall sell, and the Buyers shall purchase Electricity, for the consideration set forth in the tariff, subject to such Dispatch instruction, as may be in effect.

##### **3.2 SUPPLY OF STARTUP/BACK UP POWER**

Upon the Seller's request, the Buyer shall provide startup/backup power to the Unit. The Buyer shall submit an account of the electrical energy consumed due to such supply at the end of every Billing month and the Seller shall raise a monthly bill after netting off such amount.

##### **3.3 DECLARED CAPACITY**

The Seller shall comply with the provisions of the applicable Law regarding Availability including, in particular, to the provisions of the ABT and Grid Code relating to information of Availability and the matters incidental thereto.

The Seller shall inform the State Load Dispatch Center and Buyers on a daily basis of the operating schedule and generation capacity ("Declared Capacity") for each time block through out the following day to confirm ABT requirements and any limitations, restrictions, derating and outages expected to affect the generating Unit on the following day. As soon as practicable following the Commercial Operation Date and thereafter not later than 10.00 hours of each day, the Seller shall deliver to the SLDC and the Buyers a daily notification containing the Declared Capacity for each time block through out the following day (and where such Declared Capacity changes, the time at which any change is expected to take effect). Whenever the Seller believes that any information that it has provided to the SLDC and Buyers no longer accurately reflects its expectations, it shall promptly deliver to the SLDC/ Buyers a written notice revising such information. However, for the purpose of calculation of recoverable fixed charges, the Declared Capacity as per daily declaration shall only be considered, except when

(a) the Seller makes a downward revision in Declared Capacity provided that such a revision in Declared Capacity shall be subject to a cap of five such revisions in a month and one such revision on a particular day. If the Seller makes a downward revision in the Declared Capacity, then Seller will not be permitted to revise the Declared Capacity upwards without the consent of the SLDC/ Buyers. However, the SLDC/ Buyers shall, taking into considerations the system conditions, make every effort to off take the increased level of generation.

(b) the Seller makes an upward revision in the Declared Capacity and SLDC/ Buyers at its discretion accepts such revision.

##### **3.4 DISPATCH INSTRUCTION**

The Seller shall comply with the provisions of the applicable Law regarding Dispatch Instructions, in particular, to the provisions of the ABT and Grid Code relating to Dispatch and the matters incidental thereto.

(a) The Seller shall follow the directives of the SLDC/ Buyers to back down or increase or resume generation, in each case consistent with the technical limits of the Unit, Prudent utility practices, this Agreement and any other arrangement between the Seller and the Buyers regarding communication and coordination of operations and the provisions set out in grid code, if any. Each such directive by the SLDC/ Buyers to operate the Unit at a specified loading level for a specified duration for a day is deemed to constitute one "Dispatch instruction". Normally no more than one Dispatch instruction may be given each day in addition to any such instruction issued in response to an Emergency. In the absence of any Dispatch instruction from the SLDC/ Buyers, the Unit will operate according to the day ahead capacity notice furnished by the Seller in accordance with Article 3.3.

(b) the Seller makes an upward revision in the Declared Capacity and Buyer at its discretion accepts such revision.

### **3.5 DISPATCH PROCEDURE**

(a) The Seller shall inform the Buyers on a daily basis for each time block through out the following day at 10.00 hours its operating schedule and the Declared capacity of the Unit and any limitations, restrictions, de-ratings and outages expected to affect the Unit on the following day. The SLDC/ Buyers in turn shall intimate the Dispatch schedule for the following day with respect to the Unit by 17.00 hours.

### **3.6 CAPACITY TESTS**

#### **3.6.1 Repeat Performance Tests**

**3.6.1.1** The Buyers may from time to time during the Operating period, but only if the available Capacity has not been one hundred percent (100%) of the Contracted Capacity of the Commissioned Unit even for a continuous period of three (3) hours during any last three (3) continuous months, require the Seller to demonstrate the Unit's Tested Capacity by carrying out a further Performance Test (a '**Repeat Performance Test**') in accordance with this article 3.6. A repeat Performance Test shall be carried out in accordance with schedule VI, save that the test shall last Twenty Four (24) hours instead seventy two (72) hours. Provided that if the Tested capacity after such test is less than one hundred percent ( 100%) of the Contracted Capacity (as existing on the Effective Date) of the Commissioned Unit, the Seller shall also have a right to conduct not more than two repeat Performance Tests within a period of six months, by giving a notice of not less than fifteen (15) days to the Buyers for each such test. Provided that the Buyers shall have a right to require deferment of each such re-tests for a period not exceeding five (5) days, without incurring any liability for such deferment, if the Buyers are unable to provide evacuation of power to be generated, due to inadequate demand in the Grid.

**3.6.1.2** The Buyers shall give the Seller not less than seven (7) day's advance written notice of the time when a Repeat Performance Test of a Unit is to begin. A repeat Performance Test may not be scheduled for any period when the Unit to be tested is due to undergo a scheduled outage.

**3.6.1.3** The Buyers and Seller shall jointly appoint the Independent Engineer to monitor the Repeat Performance Test and to certify the results in accordance with Article 3.7.

- 3.6.1.4** If the Seller wishes to take any Unit, out of service for repair before a Repeat Performance Test, it shall inform the Buyers in writing before it's scheduled start of the repairs and the estimated time required to complete the repairs. The parties shall then schedule a Maintenance Outage in accordance with the Grid Code to enable the Seller to carry out those repairs and in such a case, the Buyers requiring the Repeat Performance Test, shall defer the Repeat Performance Test until such Unit is returned to service following outage.
- 3.6.1.5** The Buyers requiring the Repeat Performance Test may jointly, for reasonable cause, defer any Repeat Performance test for up to fifteen (15) days from the date originally notified to the Seller in accordance with Article 3.6.2 if Buyers jointly notify the Seller in writing at least one (1) day before the Repeat Performance Test starts of the reason for the deferral and when the test is to be rescheduled. Provided that, such deferment at the joint request of the Buyers shall be permitted only once in respect of each of the Repeat Performance Tests.
- 3.6.1.6** The Seller, Buyers and the Independent Engineer shall have the right to designate qualified and authorized representatives (but not more than three each) to monitor the Repeat Performance Test.
- 3.6.1.7** Testing and measurement procedures applied during the Repeat Performance Test shall be in accordance with the Codes, Practices of procedures as generally/normally applied for the Performance Tests.
- 3.6.1.8** Within five (5) days of a Repeat Performance Test, the Seller shall provide each of the Buyers and the Independent Engineer with copies of the detailed test results.

**3.6.2 Annual capacity test**

If no repeat performance test in accordance with Article 3.6.1.1 is conducted during any tariff period, the Seller shall conduct an annual performance test during the next Tariff period to establish the Tested capacity of each unit in accordance with standard procedures. If the Tested capacity of such unit is less than the Contracted Capacity the Declared capacity for purposes of determining deemed generation shall not exceed the Tested capacity of such Unit as determined by such capacity test. If the tested capacity of such unit is equal to or greater than the contracted capacity, the declared capacity for purposes of determining deemed generation shall not exceed the contracted capacity. The Parties shall mutually agree upon the date for the performance of any requested Annual capacity test. The Buyers shall be entitled to monitor and witness all such tests. If the Seller is unable to establish the Tested capacity of the Unit at a level equal to or more than the contracted capacity during the Annual capacity test, the Seller thereafter shall have a right to re-run such test as early as the Seller deems appropriate, in order to establish the Tested capacity at a level equal to the contracted capacity or more provided the Seller gives the Buyers at least 24 hours prior notice of the re-running of any test. The Buyers shall bear the cost and expenses incurred by Seller for conducting any Annual capacity test requested by the Buyers to the extent such cost and expenses would not have been incurred by the Seller in the normal operation of the Unit. The Seller shall bear the costs and expenses incurred by the Seller for rerunning any Annual capacity tests.

### **3.8 MAINTENANCE SCHEDULE**

(a) The Seller and the Buyers respectively, shall ensure that their personnel are on duty at the Unit and the Dispatch centre, as the case may be, at all times, twenty-four hours a day and seven days a week.

(b) For the following Tariff period, the Seller shall submit a written schedule to the SLDC of its desired Scheduled outage period of the Unit to the SLDC/ Buyers by the first of December. Within thirty days of the receipt of the above outage schedule for the Unit, the SLDC/ Buyers shall notify the Seller in writing if the requested Scheduled outage periods are not acceptable to the Buyers. If there are any requested Scheduled outage periods that the Buyers cannot accept, the SLDC/ Buyers shall advise the Seller of the time period when such objectionable periods can be rescheduled, which rescheduled time period shall be of equal duration as the Scheduled outage period proposed by the Seller. The SLDC/ Buyers may only request a revision to the proposed outage schedule of the Seller to accommodate the reasonable requirements of the Buyers and the Buyers/ Transmission Utility's System. Subject to operating practices and this Agreement, the Seller shall use its reasonable efforts to accommodate all reasonable requests of the SLDC/ Buyers.

(c) If the Buyers or the Seller later finds that an agreed upon Scheduled outage period would place an undue hardship or economic burden upon itself, the other party shall make all reasonable effort to adjust the period for the Scheduled outage to a different time.

(d) The Seller shall use its reasonable efforts consistent with Prudent utility practices not to schedule any Scheduled outage during the period from January 1 to June 30 of each year. The Seller shall endeavor to schedule all Scheduled outages between July 1 and November 30 of each year.

(e) With respect to any repair and maintenance work on the Unit (in addition to the repair and maintenance work performed during Scheduled outages) that could be postponed by at least 72 hours but should not in the reasonable opinion of the Seller be postponed till the next Scheduled outage, the Seller shall give the SLDC/ Buyers at least 72 hours prior notice of all such repair and maintenance work (including the scheduled start date, time and duration of such work) and, subject to the requirements of the Buyers/ Transmission Utility's System and Prudent utility practices, the SLDC/ Buyers shall accommodate all reasonable requests of the Seller to perform such work.

The Maintenance Schedule may have to be revised subject to the provisions of KERC Grid Code.

### **3.9 OPERATING RECORDS**

Each Party shall keep complete and accurate operating records and all other data required by each of them for the purpose of proper administration of this Agreement. All such records shall be maintained for a minimum of five years after the creation of such record or data. The Seller shall maintain an accurate and up-to-date operating log at the facility with records of (i) real and reactive power production for each clock hour, (ii) changes in operating status, (iii) Scheduled outages and Forced outages, and (iv) any unusual conditions found during inspections. During the period such records are required to be maintained, either Party shall, after giving a prior written notice of fourteen days to the other Party, be entitled to examine during Business hours, the operating records and data relating to this Agreement of the other Party.

The Operating Records may have to be maintained as per the provisions of KERC Grid Code.

**3.10 ACCESS TO FACILITY:**

The Seller shall be required to allow free access to the representative(s) of the Buyers/ the Transmission Utility to the Facility and all other related infrastructure as frequently as the Buyers/ the Transmission Utility considers necessary. The Buyers shall have access to review information recorded by the Seller at the Facility.

**3.11 RIGHT TO AVAILABLE CAPACITY AND SCHEDULED ENERGY**

Subject to other provisions of this Agreement, the entire Contracted Capacity of the Power Station and all the Units of the Power Station shall at all times be for the exclusive benefit of the Buyers and the Buyers shall have the exclusive right to purchase the entire Contracted Capacity from the Seller.

**3.12 Third party sale**

(a) The Seller shall have the right to trade electrical energy from the Unit beyond Scheduled Generation subject to first right of refusal resting with the Buyer and un-requisitioned capacity by the Buyer as per the clause 3.4 (b). The Seller shall permit the buyer to trade the un-requisitioned capacity to a third party without any agreement on interruptible basis.

Seller shall have right to trade the un-requisitioned capacity until the schedule is revised by the Buyer with advance notice as per the scheduling provision in the regulation and IEGC.

Provided further that if the KERC allows the Seller to sell electrical energy to a third party, the Seller shall pay the Buyer wheeling charges, as applicable from time to time, for such sale as per prevailing norms. There shall be a pro rata reduction in the fixed charges borne by the Buyer.

The sale to third party shall be subject to the Open Access Regulations that may be issued by the KERC under section 42(2) of the Electricity Act.

(b) A detailed procedure for supply of electrical energy to third parties including arrangements for metering, shall be agreed upon.

**ARTICLE 4**

**TARIFF**

**4.1 Capital expenditure**

(a) Capital expenditure of the Unit shall be as defined in Article 1.

(b) Additional Capital Expenditure:

1) The following capital expenditure within the original scope of work actually incurred after the date of commercial operation and up to the cut off date may be admitted subject to approval of the Commission and subject to prudence check:

- i) Deferred liabilities:
  - ii) Works deferred for execution:
  - iii) Procurement of initial capital spares in the original scope of work, subject to ceiling of 2.50% of the project cost as on the cut off date:
  - iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
  - v) On account of change in law.
- Provided that original scope of work along with estimates of expenditure shall be submitted along with the application for provisional tariff.

Providing further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for final tariff after the date of commercial operation of the generating station.

2) Subject to the provisions of clause (3) of this regulation, the capital expenditure of the following nature actually incurred after the cut off date may be admitted with the approval of the Commission and subject to prudence check;

- i) Deferred liabilities relating to works/services within the original scope of work;
- ii) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;
- iii) On account of change in law;
- iv) Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost; and
- v) Deferred works relating to ash pond or ash handling system in the original scope of work.

3) Any expenditure on minor items/assets like normal tools and tackles, personal computers, furniture, air-conditioners, voltage stabilizers, refrigerators, fans, coolers, TV, washing machines, heat-convectors, carpets, mattresses etc, brought after the cut off date shall not be considered for additional capitalization for determination of tariff.

4) i) Impact of additional capitalization in tariff revision may be considered by the Commission twice in a tariff period, including revision of tariff after the cut off date.

Any expenditure admitted on account of committed liabilities within the original scope of work and the expenditure deferred on techno-economic grounds but falling within the original scope of work shall be serviced in the normative debt-equity (70:30) ratio.

ii) Any expenditure on replacement of old assets shall be considered after writing off the gross value of the original assets from the original project cost, except such items as are listed in clause (3) of 4.1 (b).

iii) Any expenditure admitted by the commission for determination of tariff on account of new works not in the original scope of work shall be serviced in the normative debt-equity (70:30) ratio or the agreed ratio between the Sellers and the Buyers, which ever is lower.

iv) Any expenditure admitted by the Commission for determination of tariff on renovation and modernization and life extension shall be serviced on normative debt – Equity (70:30) ratio or the agreed ratio between the Sellers and the Buyers, which ever is lower after writing off the original amount of the replaced assets from the original project cost.

(c) Additional capital expenditure included in (b) above, shall be incurred by the Seller with the consent of the Buyers and KERC. The Seller shall provide the justification and the benefit in incurring that capital expenditure and may also propose improvement to the operating parameters used for calculating tariff under this PPA and the PPA shall be changed to reflect this improvement. Provided that the Buyers and KERC shall communicate its consent within 45 days from the date of receipt of any proposal for incurring such expenditure. If the Buyers and KERC does not communicate its consent within the specified time, the consent is deemed to have been communicated by it.

Provided further that the Buyers shall not unreasonably withhold its consent to such expenditure, which in the opinion of the Seller, is necessitated for operating and maintaining the Unit in accordance with Prudent utility practices.

## **4.2 Tariff**

Tariff for Electricity shall be determined on the basis of a two-part tariff structure and shall be fixed for each Tariff period. The tariff will be the sum of Recoverable fixed charges, Energy charges and Incentive payment (if any) each as calculated pursuant to this Article.

## **4.3 Recoverable fixed charges (Capacity charges)**

(a) The Seller shall be entitled to recover Recoverable fixed charges incurred by it during each Tariff period, in accordance with Articles 4 and 6 of this Agreement.

(b) The components of such Recoverable fixed charges are as hereunder:

### **(i) Interest payment**

- (a) Interest on loan capital shall be computed loan wise on the loans arrived at the manner indicated in Annexure III.
- (b) The seller shall make every effort to swap the loan as long as it results in net benefit to the buyers. The costs associated with such swapping shall be borne by the buyers.
- (c) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefit passes on to the buyers.

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- (d) In case of any dispute, any of the parties may approach the KERC with proper application. However, the buyers shall not withhold any payment as ordered by the KERC to the seller during pendency of any dispute relating to swapping of loan.
- (e) In case any moratorium period is availed of by the seller, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.
- (f) The seller shall not make any profit on account of swapping of loan and interest on loan.

**(ii) Return**

The Seller shall be entitled to receive a return on the equity base determined in accordance with Annexure III equal to 14% per annum-

**(iii) Depreciation including advance against depreciation.**

**(a) Depreciation**

For the purpose of tariff, depreciation shall be computed in the following manner, namely:

- (i) The value base for the purpose of depreciation shall be the historical cost of the assets.
- (ii) Depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Annexure X.  
The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset.
- (iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

**(b) Advance against Depreciation**

In addition to allowable depreciation, the seller shall be entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD= Loan repayment amount subject to a ceiling of 1/10<sup>th</sup> of loan amount as per Annexure XI minus Depreciation as per Annexure X.

Provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year.

Provided further that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

**(iv) Operation and maintenance expenses.**

The Operation and Maintenance expenses for the first Tariff Period will be equal to 2.5% of Capital Expenditure including the expenditure during the Cut-off date of the Unit (base year = X), and in each subsequent Tariff Period after the first Tariff Period shall be increased to  $X * (1.04)^n$ .

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Where

X = Base year of Operation and maintenance expenses.

N= No. of years from the base year. (eg. X \* (1.04)<sup>2</sup> for second tariff period; X \* (1.04)<sup>3</sup> for third tariff period; and ..... X \* (1.04)<sup>n</sup>.

- (v) **Tax component:** All Taxes on income paid by the Seller in relation to the Unit.
- (vi) **Interest on working capital:** Interest on working capital shall be computed for a Target Availability. Working capital shall not exceed the following:
  - a) Operation and maintenance expenses for one month;
  - b) Cost of Primary fuel for Sixty days;
  - c) Cost of Secondary fuel for Sixty days;
  - d) Maintenance spares at 1% to be on plant & equipment and Additional Capital Expenditure with escalation at 6% per annum;
  - e) Receivables equal to two months on fixed and variable charges on Target Availability.

**4.4 Energy charges**

Energy charges for each Billing month shall be the sum of recoverable cost of Primary fuel, Secondary fuel and shall be payable as determined by the Commission from time to time and subject to the following:

Energy charges in Rupees is the product of rate of energy charges in Rs. Per kWh and Scheduled Generation (ex-bus).

**(a) Recoverable cost of primary fuel per Kwh shall be calculated as follows:**

$$(GSHR/(1-AC)) - (SOC \times CVSF_n)$$

$$RPF_{cn} = \left\{ \frac{(GSHR/(1-AC)) - (SOC \times CVSF_n)}{CVPF_n} \right\} \times CPF_n$$

Where,

RPF<sub>cn</sub> = Recoverable Primary fuel cost per Kwh for Billing month 'n' in Rupees.

GSHR = Gross Station heat rate in shall be as narrated in Article 1.

SOC = Secondary fuel consumption which shall be 4.5 ml/kWh during first six months after Commercial Operation Date and 2 ml/kwh at all times thereafter.

CVSF<sub>n</sub> = Gross calorific value of Secondary fuel during Billing month 'n' in kcal/ml.

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CVPFn            Gross calorific value of Primary fuel during Billing month 'n' in kcal/kg  
CPFn             Weighted average delivered cost of Primary fuel in Rupees per kg during Billing month 'n'.  
AC                = Auxiliary Consumption shall be as narrated in article 1.

**(b) The recoverable cost of Secondary fuel per Kwh is calculated as follows :**

SOC

$$RSF_{cn} = \left\{ \frac{\text{SOC}}{1000000} \right\} \times CSF_{cn},$$

where,

RSF<sub>cn</sub>        = Recoverable Secondary fuel cost per Kwh for Billing month 'n' in Rupees

SOC            = Secondary fuel consumption which shall be 4.5 ml/kWh during first six months after Commercial Operation Date and 2 ml/kwh at all times thereafter.

CSF<sub>cn</sub>        = Weighted average delivered cost of Secondary fuel in Rupees per kilolitre.

AC             = Auxiliary Consumption shall be as narrated in article 1.

(c) Rate of Energy charges = ( RPF<sub>cn</sub> + RSF<sub>cn</sub> )

#### **4.5 Incentive payment**

Incentive payment will be calculated as mentioned in Article 6.3

#### **4.6 Quantity of Primary fuel and Secondary fuel.**

- (a) The quantity of Primary fuel shall be as weighed at the facility at the time of its receipt.
- (b) The quantity of Secondary fuel shall be as measured at the facility at the time of its receipt.

#### **4.7 Cost of Primary fuel and Secondary fuel**

The cost of Primary fuel and Secondary fuel shall be the aggregate cost associated with purchasing and delivering fuel. This cost will include price of fuel corresponding to the grade/quality of fuel inclusive of royalty, taxes and duties as applicable, processing charges, transportation cost by rail / road /or any other means, transportation management cost

(port charges, insurances, other handling charges) and for the purpose of computation of energy charges, shall be arrived at after considering normative transit and handling losses of 0.8% (applicable for Non-pithead generating station)

**4.8 Weighted average delivered cost of Primary fuel and Secondary fuel**

Weighted average delivered cost of Primary fuel and Secondary fuel will be computed as follows:

$$CPF_n = \{(A * Q) + C\} / (Q + R),$$

Where,

A = Weighted average delivered cost of Primary fuel as at the end of the Billing month (n-1) in Rupees/Kilogram.

Q = Quantity of Primary fuel as at the end of Billing month (n-1) in Kilograms.

C = Cost of Primary fuel received during the Billing month n as per Article 4.7 in Rupees.

R = Net of Quantity of Primary fuel [gross quantity received during Billing month n in Kilograms multiplied by (1-Tpf)].

Tpf = Normative transit and handling losses at 0.008 of Primary fuel.

$$CSF_n = \{(A * Q) + C\} / (Q + R),$$

Where

A = Weighted average delivered cost of Secondary fuel as at the end of the Billing month (n-1) in Rupees/Kilolitre.

Q = Quantity of Secondary fuel as at the end of Billing month (n-1) in Kilolitres.

C = Cost of Secondary fuel received during the Billing month n as per Article 4.7 in Rupees

R = Quantity of Secondary fuel received during Billing month n in Kilolitres.

**4.9 Tax on income :**

This shall be as per CERC regulations applicable from time to time.

**4.10 Unscheduled Interchange (UI) charges**

This shall be as per CERC regulations applicable from time to time.

**4.11 Tax Escrow Mechanism:**

- (1) The beneficiaries shall maintain an interest bearing tax escrow account in a scheduled bank, to which all amounts of interest shall be credited.
- (2) The tax liability shall be estimated two months before the commencement of each year and intimated to the Buyer. The Seller shall endeavor to minimize its liability on account of taxes recoverable from the Buyer.
- (3) The Seller shall be authorised to withdraw the amounts for settling the income tax liability on presentation to the escrow holder, a certificate from the statutory auditors that the amounts are immediately due and payable to the taxing authority.
- (4) The Seller shall pay into the tax escrow account any refund received from the taxing authority.
- (5) The refunds, if any, shall not be paid back to the Buyer and shall be adjusted in the escrow account. Any balance due or returnable shall be rolled over to the next year.
- (6) The escrow account shall be reflected in the books of accounts of the Seller as their bank account.

4.12 The wheeling charges and other charges (if any) payable to ESCOM/Buyer for wheeling the power from the Unit to Maralihalla raw water pump house shall be recoverable from the Buyer.

**ARTICLE 5**

**METERING**

**Measurement of energy**

Measurement of electrical energy shall be done at the Interconnection point or points by the Metering system.

**5.2 METERS**

For installation of Meters, Meter testing, Meter calibration, Meter reading and all the matters incidental thereto, the Seller and Buyers shall follow and be bounded by the Central Electricity Authority (Installation & Operation of meters) regulations 2006, the Grid code and ABT as amended and revised from time to time.

**5.3 METERING SYSTEM**

(a) The Metering system shall consist of Main Meters, Check Meters and Stand By Meters each of three phase four wire system of two tenths (0.2) accuracy class and capable of measuring all the parameters required in the Availability Based Tariff (ABT) Regime and shall be installed at the Interconnection point by the Seller, including associated equipment (viz., CTs and PTs) of the same class and accuracy. Each of the Main, Check and Stand By meters shall be capable of recording all desirable parameters for tariff computation purposes.

(b) Main, Check and Stand By meters of two-tenths (0.2) accuracy class shall be installed at the generator terminals by the Seller.

(c) All meters shall be jointly inspected, tested and sealed on behalf of both the Parties and shall not be interfered with, except in the presence of the authorised representative of both the Parties. For testing and calibration of meters, a notice of seven days shall be given by the Party interested, to the other Party, so as to enable the other Party to be present.

(d) All meters shall be checked for accuracy quarterly by both Parties jointly and shall be treated as working satisfactorily so long as the errors are within the limits prescribed for meters of the class as per International Electro-technical Commission 687 (IEC 687). Voltage transformers and current transformers shall be checked for accuracy at least once in every two years.

(e) If the errors are not within the prescribed limits, then the Main meters and the Check meters shall be calibrated and/or such other action taken so as to bring the errors within prescribed limits.

(f) The Main meters, Check meters and Stand By Meters shall be calibrated once in every six months jointly by both Parties in January and July, irrespective of the calibrations that might have been done, where necessary, during the quarterly checks. The Parties shall endeavour to adjust errors to as close to zero as possible.

(g) If the errors found at the time of half yearly calibration are beyond permissible limits, the same procedures as applicable to the quarterly test checks shall be followed. In the event the meters are not capable of being recalibrated for tolerances within the permissible limits, the same shall be replaced by respective parties with energy meters conforming to requirements.

(g) If on the scheduled date, a Party is unable to be present for checking the meters as per clause (c) or for calibrating the meters as per clause (f) above, the Parties may mutually decide on an alternative date within the next seven days for checking or calibrating the energy meters as the case may be. If on such alternative date a Party is not present, the other Party may complete such checking or calibration which shall be binding on both Parties.

#### **5.4 METER READINGS**

(a) On each Meter reading date, the authorised representatives of both Parties shall take meter readings and an acknowledgement thereof signed by them.

(b) If due to any reason whatsoever, either party is not present at the time of reading the energy meters on a Meter reading date, then the readings of the party that conducts such readings shall be conclusive for the purposes of this agreement.

(c) Meter readings of the Main meters will form the basis of billing, so long as the results of the quarterly checks thereof are within the prescribed limits. However, if during the period when the Main energy meter or the associated equipment or part thereof is found defective or the quarterly checks indicate errors beyond the prescribed limits of accuracy, the reading as recorded by the Check meter will be taken as the Net metered energy for the purpose of preparation of the relevant Tariff Invoice. Further, if both the Main meter and the Check meter or any associated equipment thereof are found defective or errors in meters are beyond the prescribed limits, then the Net metered energy will be jointly determined by the Parties.

(d) If in any Billing month, the Net metered energy for that period, as reckoned from the reading of the Main meter differs from that of the Check meter by more than plus/minus point four percent (0.4%), then the Main meter and Check meter shall be jointly tested in turn as per the standard procedure and errors at various levels tabulated.

(i) If on such testing, the error in the readings of the Main meter is found to exceed plus/minus point two percent ( 0.2 %) and the error in the readings of the Check meter is found to be less than plus/minus point two percent (0.2%), then the Net metered energy as reckoned from the readings recorded by the Check meter for the above month shall prevail. The Main meter shall then be calibrated.

(ii) If on such testing, the error in the readings of the Check meter is found to exceed plus/minus point two percent ( 0.2%) and the error in the readings of the Main meter is found to be less than plus/minus point two percent (0.2%), then the Net metered energy as reckoned from the readings recorded by the Main meter for the above month shall prevail. The Check meter shall then be calibrated.

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(iii) If on such testing, the error in the readings of the Main meter and the Check meter are found to exceed plus/minus point two percent ( 0.2 %), the Net metered energy as reckoned from the readings recorded by the Main meter for the above month shall be revised accordingly taking its error effect into account. Both the Main meter and the Check meter shall then be calibrated.

(e) Pending results of such testing billing and payment shall be based on the readings of the Main meter.

(f) Seller and Buyer shall each compile and maintain records w.r.t. the meter readings, checking, testing, calibration conducted by each Party. Such records will be made available for inspection by the other Party during business hours upon reasonable advance notice.

**5.5 CORRECTIONS IN BILLING**

Corrections in billings, wherever necessary, shall be applicable to the period between the previous meter reading and the date of the test calibration in the Billing period when the error is observed and this correction shall be for the full value of the absolute error. For the purpose of the correction to be applied, the meter shall be tested at one-hundred percent (100%) fifty percent (50%), twenty percent (20%) and ten percent (10%) load at unity power factor and eight-tenth (0.8) lagging power factor. Of these eight values, the error at the load and power factor nearest the average monthly load served at the Interconnection Point during the period shall be taken as the error to be applied for correction.

**5.6 LOCATIONS OF METERS**

**(1) The location of interface meters shall be as per the Table given below :**

Provided that the generating companies or licensees may install meters at additional locations in their systems depending upon the requirement.

<b>Sl. No</b>	<b>Stages</b>	<b>Main meter</b>	<b>Check meter</b>	<b>Standby meter</b>
<b>A.</b>	<b>Generating Station</b>	On all outgoing feeders.	all outgoing feeders.	(i) High Voltage (HV) side of Generator Transformers (ii) High Voltage (HV) side of all Station Auxiliary Transformers

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<b>B.</b>	<b>Inter-Connecting Transformer (ICT)</b>	High Voltage (HV) side of ICT.	-	Low Voltage (LV) side of ICT.
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## **ARTICLE 6**

### **BILLING AND PAYMENT**

#### **6.1 Recoverable fixed charges**

(a) Subject to the provisions of this Article, in consideration of the performance of its obligations hereunder, the Seller shall be entitled to recover, Recoverable fixed charges, the components of which are described in Article 4.

(b) At least -ninety days prior to the beginning of each Tariff period, the Seller shall prepare good faith estimates of the components of the Recoverable fixed charges that it is entitled to recover in accordance with the terms of this agreement during such Tariff period. The Seller shall submit to the Buyers for their review and comment a report showing, in reasonable detail, such Estimated recoverable fixed charges.

(c) For purposes of calculating the Estimated recoverable fixed charges for the ensuing Tariff period, the Scheduled Generation shall be taken as 0.80 times the Contracted Capacity times the number of hours in the Tariff Period after commercial operation date.

(d) Within fifteen days on receipt of such estimates, complete with reasonable detail, the Buyers shall submit its objections to the estimated fixed charges. The Buyers and Seller shall expediently try to resolve the objections, if any, in good faith. In case the parties do not reach agreement within fifteen days then the matter shall be referred to KERC. Both parties shall use their best efforts in resolving the matter within one month and provide KERC all information required for the resolution. The Buyers shall pay to the Seller the undisputed amount pending such resolution.

(e) For each Billing month the Buyers shall pay the Seller Monthly fixed charge amount.

(f) Within thirty days after the end of each Tariff period, the Seller shall compute (i) the actual amount of Recoverable fixed charges for such Tariff period, (ii) the Adjusted recoverable fixed charges for such Tariff period, and (iii) the total of all Monthly fixed charge amount for such Tariff period.

(g) If the Scheduled generation for any Tariff period is equal to or greater than the Target Availability for such Tariff period, the Seller shall be entitled to receive (to the extent not previously received) Recoverable fixed charges incurred by the Seller during such Tariff period. Accordingly, (i) if the Recoverable fixed charges exceed the total of all Monthly Fixed charge amount as billed , then the Buyers shall pay the Seller such excess within 45 days from the end of Tariff period and (ii) if the total of all Monthly Fixed charge amount billed exceed the Recoverable fixed charges, then the Seller shall pay the Buyers such excess with in 45 days from end of the Tariff period.

(h) If the **Declared capacity or Declared Generation** for any Tariff period is less than the Target Availability for such Tariff period, the Recoverable Fixed Charges shall be reduced on a pro-rata basis and the Seller shall only be entitled to receive Adjusted recoverable fixed charges. Accordingly, (i) if the Adjusted recoverable fixed charges for such Tariff period exceed the total of all Monthly fixed charge amount, then the Buyers shall pay the Seller such excess with in 45 days from end of the tariff period and (ii) if the total of all Monthly fixed charge amount for such Tariff period exceeds the Adjusted recoverable fixed charges, then the Seller shall pay the Buyers such excess with in 45 days from end of the tariff period.

Recoverable Fixed Charges Payment on a monthly basis will be determined using following formula:

$$FCP_n = (RFC/12)*n * [\min(TAn, 0.80)]/0.80 - AFCP_{n-1}$$

RFC = Annual Recoverable Fixed Charge Amounts which the seller is entitled to receive for the Tariff period

n = month from the start of the Tariff Period in which the billing is occurring.

AFCP<sub>n-1</sub> = The aggregate of the Monthly Recoverable Fixed Charge amounts billed by the seller from the start of the tariff period in which Billing Period n occurs through and including Billing Period (n-1) but not including Billing Period n.

TAn = Target Availability for the time span commencing from the start of the Tariff Period in which the Billing Month 'n' occurs through, including the Billing Month 'n'

## **6.2 Energy charges**

For each Billing month the Buyers shall pay the Seller, Energy charges computed in accordance with Article 4. At the end of the Tariff period, the seller can raise a supplementary invoice for any reconciliation in the Fuel quantity consumed within 45 days from the end of Tariff Period.

## **6.3 Incentive payment**

The total Incentive shall be computed at the end of the each billing month and payable monthly at the rate of Rs. 0.25/kwh for every additional unit of electricity delivered to the interconnection point beyond a PLF of 80% during a Tariff Period.

For each Billing month the Seller shall be entitled to receive Incentive payment for such Billing month in accordance with the following formula:

$$EIP_c = EIP_n - EIP_{n-1} \quad \text{where,}$$

EIP<sub>c</sub> = Energy for Incentive payment for Billing month c.

n = Month from the start of the Tariff Period in which the billing is occurring.

EIP<sub>n</sub> = Energy for Incentive payment which the Seller is entitled to receive for the period from the start of the Tariff period in which Billing month 'n' occurs through and including Billing month 'n'.

EIP<sub>n-1</sub> = Energy corresponding to Incentive payment actually received by the Seller during the period from the start of the Tariff period in which Billing month 'n' occurs through and including Billing month n-1, but not including Billing month n.

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$$EIP_n = [\max(0, APLF_n - 80\%)* 25] \quad D* 240*TC*(1-AC)$$

Where

$$APLF \text{ ( in percentage)} = (NME+GG*AC)/(TC*D*240)$$

$APLF_n$  =APLF for the timespan commencing from the start of the Tariff Period in which the Billing Month 'n' occurs through, including the Billing Month 'n'

NME= Net Metered Energy

TC = Tested Capacity of the Unit (in MW)

AC = Auxiliary Consumption (expressed in percentage of Gross Generation)

GG = Gross Generation

D = no of days from the start of the Tariff period to the end of billing month

If the Incentive payment for any Billing Month is a negative number, the buyers shall be entitled to set off such amount against the monthly fixed charge payments and energy payments, payable by the buyers in respect to such billing month.

**6.4 Submission of tariff invoice by the seller.**

(a) The Seller shall submit to the Buyers a Tariff Invoice for each Billing month setting forth those amounts payable by the Buyers for Monthly fixed charge amount, Energy charges and Incentive payment wherever applicable on 5<sup>th</sup> day of the month of the metering date. Along with each monthly bill, the seller will submit documents as listed in Annexure V.

(b) The Seller shall, if necessary, submit to the Buyers Supplementary invoices each month for any other payment not included in the Tariff invoice. Provided that no revision in respect of a Tariff invoice shall be included in a Supplementary invoice after one month of the expiry of the relevant Tariff period.

(c) Any Tariff invoice or Supplementary invoice shall specifically indicate the payments attributable to the Net metered energy. The Tariff invoice or Supplementary invoice shall be submitted to the Buyers along with a covering letter in triplicate during Business hours on a Business day.

(d) The Designated officers of the Buyers shall promptly acknowledge the receipt of the invoice and covering letter and indicate the date of receipt of the invoice on the duplicate and third copy of the covering letter and return to the Seller.

**6.5 Payment by the Buyers**

(a) The Buyers shall communicate to the Seller and the Bank any dispute in respect of the Tariff invoice or the Supplementary invoice, within ten Business days of the Acknowledgement date. If the Buyers does not communicate to the Bank and the Seller any such dispute, it shall be construed as deemed acceptance by the Buyers in respect of the entire amount of such invoice.

(b) In case the Buyers communicate any dispute in respect of a Tariff invoice or a Supplementary invoice, both the Parties shall enter into good faith negotiations and resolve the same within thirty days of the Acknowledgement date. The Parties shall follow the process in Article 7.1 (a), (b) and (c) for resolving any dispute hereunder.

(c) Notwithstanding any dispute that may be raised under (a) above, the Buyers shall pay the Seller the amount in respect of the Tariff invoice or Supplementary invoice on or before the Due date of payment to a bank account designated in writing by the Seller.

(d) After settlement of dispute, if any amount becomes payable by the Seller to the Buyers, then the same shall be paid within seven days.

#### **6.6 Interest on belated payment**

(a) Any payment, including payment in respect of disputed amounts, made by the Buyers beyond the Due date of payment shall carry interest at the Default rate. Notwithstanding the foregoing, this does not give any right whatsoever to the Buyers to delay payment and accordingly is without prejudice to any other remedy the Seller may have for late payment by the Buyers.

(b) All such interest shall accrue from day to day and shall be calculated on a 365 day year basis.

#### **6.7 Dispute after payment**

(a) Notwithstanding the foregoing, nothing contained herein shall prejudice the right of the Buyers or the Seller to dispute the amount in respect of any Tariff invoice or Supplementary invoice after payment for such invoice has been made. Provided that no such dispute shall be raised one month after the expiry of the relevant Tariff period, except in the cases of bills pertaining to the last quarter of the Tariff Period.

(b) The Buyers or the Seller shall give a written notice of the dispute to the other Party, as soon as reasonably possible after it discovers the same. Such notice shall identify the disputed bill, state the amount in dispute and set forth a full statement of the grounds on which such dispute is based. Upon final adjustment, the refund, if any, together with interest at Default rate on any overpayment/underpayment made by the Buyers, shall be adjusted in the Tariff invoice next submitted to the Buyers.

#### **6.8 Letter of Credit**

(a) Not later than thirty days from the Effective date and at all times during the term of this Agreement, the Buyer shall cause to be in effect an irrevocable unconditional, transferable, confirmed, revolving Letter of credit issued in favour of the Seller by a Bank.

(b) The Buyer shall obtain and provide to the Seller a copy of a written commitment from a branch of the issuing Bank along with the draft format of Letter of credit, which shall contain a binding obligation by such Bank to issue the first Letter of credit, in favour of the Seller, within one month from the Effective date.

(c) Each Letter of credit shall (i) on the date it is issued, be valid for one year (ii) be transferable by the Seller to any of its Lenders. Drafts drawn under the Letter of credit shall be payable on Due date of payment, upon the execution and presentation by the Seller of a Tariff invoice or a Supplementary invoice pursuant to Article 6.7

(d) The Buyer shall ensure that no later than thirty days prior to the expiration/maturity of any Letter of credit, a replacement or extension shall be operative in the favour of the Seller. Any such extensions or replacement letters of credit shall be on identical terms as the initial Letter of credit provided to the Seller.

(e) The Letter of credit shall be for an amount ("LC Amount") equal to 1.5 (one and a half) month's projected payments (which amount shall take into account the Tariff payments based on 80% Target Availability and shall be adjusted annually immediately prior to the commencement of each Tariff period to take into account changes in such projected payments).

### **6.9 Drawal under the Letter of credit**

(a) Drawal under a Letter of credit in respect of a Tariff invoice or Supplementary invoice, shall require

- (i) such Tariff invoice or Supplementary invoice;
- (ii) meter reading jointly signed by the authorised representative(s) of the Party/Parties, supporting the payments attributable to Net metered energy in respect of such Tariff invoice or Supplementary invoice;
- (iii) the duplicate copy of the acknowledgement of the Buyer pursuant to Article 6.5 (d) confirming the receipt of such Tariff invoice or Supplementary invoice; and
- (iv) a certificate from the Seller stating that the amount payable by the Buyer in respect of such Tariff invoice or Supplementary invoice has not been paid by the Buyer till the Due date of payment of such invoice.

(b) In respect of a Tariff invoice or a Supplementary invoice, the Bank shall make payment for

- (i) the full amount less any payment made, provided the Buyer does not dispute any or all portion of such invoice amount within ten Business days from the Acknowledgement date; and
- (ii) the full amount less any payment due and the disputed amount, provided the Buyer communicates to the Bank and the Seller such dispute within ten Business days from the Acknowledgement date.

### **6.10 Default of tariff invoice payment**

(a) The Seller shall present the Tariff invoice and any Supplementary invoice for direct payment by the Buyers. If the Buyers fail to pay the amount due in respect of such invoices by the Due date of payment, the Seller shall have recourse to the Letter of credit, without any rebate.

- (b) At any point of time, if the receivables exceeds the 3 Billing months aggregate of Recoverable fixed charges, Energy charges and Incentive payment from the Buyer, the Seller has a right to trade the energy generated to a third party, until the payment due by the Buyer is paid to the Seller, subject to applicability of clause 6.13.
- (c) The above is without prejudice to any other right or remedy that the Seller may have under this Agreement or any other Law in force.

#### **6.11 Adjustment in tariff**

(a) Any circumstance, including a Change in law, which

- (i) materially increases the cost or materially decreases the revenue of the Seller in connection with financing, ownership, operation or maintenance of the Unit;
- (ii) materially increases the revenue or materially decreases the cost of the Seller in connection with financing, ownership, operation or maintenance of the Unit;
- (iii) requires the Seller to incur material Additional capital expenditure then the Seller shall
  - (A) determine the amount of such increase or decrease in cost or revenue or the amount of such capital expenditure;
  - (B) submit to the Buyers a certificate setting forth in reasonable detail the basis and calculations of such increase or decrease in cost or revenue and/or the amount of such capital expenditure (which shall be subject to verification and review by the Buyers and is agreed to be material); and
  - (C) subject to the approval of the additional capital expenditure by the Buyers and KERC, calculate equitable adjustments to the Recoverable fixed charges and the Energy charges to reflect such increase or decrease in cost or revenue and/or such capital expenditure with the intent that the financial position of the Seller shall remain unaffected by such circumstance.
  - (D) Thereafter, the Monthly fixed charge amount, the Energy charges and/or such other payments (if applicable) shall be adjusted to reflect such increase or decrease in cost or revenue and/or such capital expenditure and applied in the formulae for calculating payments.
  - (E) for purposes of this Article, “material” or “materially” means an increase or decrease in cost of capital expenditure which individually or together with all prior changes in the same Tariff period exceeds Rs. 25,00,000.
  - (F) The Seller shall not be entitled to any additional payment or an adjustment to the Monthly fixed charge amount and Energy charges, to the extent that an increase in cost or decrease in revenue or capital expenditure has been, or will be, reflected in payments or adjustments to such rates or payments pursuant to any other provision of this Agreement.

#### **6.12 Rebate**

For payment of bills of Recoverable fixed charges, Energy charges and Incentive payment on presentation (Acknowledgment date), a rebate of 2% shall be allowed. If the payments are made by a mode within a period of one month (Due date of payment) of presentation of bills by the Seller (Acknowledgement date), a pro-rata rebate of 1% shall be allowed.

**6.13 Mode of accounting of payments:**

1. All payments made by the Buyers will be adjusted in the following order of priority:
  - a. Interest on revenue arrears;
  - b. Revenue arrears; and
  - c. Current month's revenue.
2. For the purpose of calculation of Interest on revenue arrears, the Seller shall not reckon, first 24 hours of delay in respect of cheques issued by the Buyers.

**6.14 Escrow Account**

**6.14.1**

- (a) To provide payment security to the seller for Buyers payment obligations hereunder, it will provide by way of an escrow facility. Buyers shall execute, deliver and provide an escrow facility that will cover the interest and debt repayment liability of the Seller corresponding to the Financing document and Energy charges. The escrow facility will be operationalised 30 days before the Commercial Operation Date (COD) of the Unit. The escrow agreement shall be in the form and substance acceptable to the Seller and Buyers. For the purpose of determination of escrow cover, the debt of the Unit will be restricted to 80% of the debt along with interest costs and Energy Charges.
- (b) The escrow agreement between the Seller and the Buyers shall also provide for security and hypothecation arrangement, in a form and substance acceptable to the seller and to the Financing Parties, whereby Buyers shall hypothecate to the Seller the amounts deposited in the escrow account and the receivables (as defined in the escrow agreement)
- (c) The Buyers will provide a written commitment to provide escrow arrangement for this Unit to the Financing Parties in the form acceptable to them within one month of the signing of this Agreement.
- (d) The seller and the Buyers along with a Bank ("the escrow agent") shall enter into an escrow agreement acceptable to all parties one month before the Commercial Operation Date (COD) for the establishment and operation of an escrow account in favour of the Seller. The operations in the escrow account shall be governed by the following:
  - (i) The escrow agent shall be the same banking institution through which Buyer will open an irrevocable LC arrangement referred above and the escrow account shall be opened at the same branch of the escrow agent which maintains the bank account of the Buyer to which the maturing obligations under the LCs will be debited.
  - (ii) The escrow account shall be opened atleast one month prior to the date of Commercial Operation Date (COD) of the Unit.
  - (iii) The Seller and the buyers shall agree atleast three months prior to the date of opening the escrow account regarding the identified areas/circles, the collections from which shall flow directly into the escrow account.

- (iv) The cumulative monthly cash flows from the identified areas/circles into the escrow account in the manner stated in (iii) above shall at least be equivalent to 110% of the estimated monthly value of the Tariff invoice to be submitted by the Seller. If there is a shortfall in the cumulative amount of such cash flows so as to reach the cover of 110% on a monthly basis, the Buyers shall cause sufficient funds to be credited to the escrow account so as to maintain the aggregate cumulative flows to yield a cover to the extent stated above.
- (v) If the Buyer fails to make payments through LC as provided herein or fails to renew, replenish or enhance the LC as required, or if the Tariff Invoice amount exceeds the amount of LC, the escrow agent shall automatically trigger the operation in the escrow account so as to transfer sufficient balance to the LC Account to be in a position to honour the Tariff Invoice under the LC. Such triggering of the transfer of funds from the escrow account shall be unconditional and at no time the Buyer shall restrain, revoke or modify the authority to this effect without the express consent of the Seller. The Buyer shall also in no event act in any manner as may negatively affect the inflow of revenues into the escrow account.
- (vi) The triggering of the operation of the escrow account shall be carried out by the escrow agent in preference to meeting any cheques, LC or other payment instructions issued by the Buyer from time to time. Any modification to this arrangement will be taken on record by the escrow agent only with the express consent of the Seller.

Any bank charges or other expenses for maintaining or operating the escrow account shall be borne by the buyers.

**6.14.2** On the occurrence of the following events in respect of any Buyer;

- (i) a period of not less than 2 (Two) years from COD of the Power Station has elapsed; and
- (ii) such Buyer has achieved, for its ability to honor tariff payment obligations to the Seller under this agreement, a credit rating of 'A' or better, from a SEBI registered Indian Credit Rating Agency mutually agreed between the Seller and the Lender/s, consistently for a period of at least 3 (three) years; and
- (iii) Immediately prior to the 3 (three) year period mentioned in Sub Clause (ii) above, for a period of at least 2 (two) years there has been no Buyer Event of Default by such Buyer,

such Buyer shall intimate the seller in writing of the occurrence of the same and its intention to discontinue the Escrow (Collateral) arrangement. If the Seller desires to continue the Escrow (Collateral) arrangement, it shall intimate the same to the concerned Buyer in writing within 30 (Thirty) days of receipt of intimation from the concerned Buyer and in such case the Seller shall be liable to bear the cost of continuation of Escrow (Collateral) arrangement with effect from such date. In case the Seller fails to respond or agrees to discontinue, the Escrow (Collateral) arrangement shall forthwith cease and the Escrow Agreement shall stand terminated as per the terms thereof;

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Provided that in case of any conditions mentioned under (i), (ii) and (iii) in article 6.15.2 ceases to be true, then within 90 (Ninety) days of occurrence of such event, the Buyer shall reinstate the Escrow (Collateral) arrangement at it's own cost.

**ARTICLE 7**

**DISPUTE RESOLUTION**

**7.1 Informal dispute resolution**

- (a) The Parties hereto agree to attempt to resolve all disputes arising hereunder promptly, equitably and in good faith.
- (b) The Parties further agree to provide each other with reasonable access during Business hours to any and all non privileged records, information and data pertaining to any such dispute.
- (c) Each Party shall designate in writing and communicate to the other Party a representative who shall be authorised to resolve any dispute arising under this Agreement in an equitable manner and, unless otherwise expressly provided herein, to exercise the authority of the Parties hereto to make decisions by mutual agreement.
- (d) If the designated representatives are unable to resolve a dispute under this Agreement within thirty days after such dispute arises, such dispute shall be referred to higher authorities designated by the Parties for resolution of the dispute.

**Article 7.2**

**Arbitration**

- (a) All disputes or differences between the Parties arising out of or in connection with this Agreement shall be first tried to be settled through mutual negotiation.
- (b) In the event that such differences or disputes between the Parties are not settled through mutual negotiations within ninety (90) days after such dispute arises, then it shall be referred to the KERC for arbitration. In the event that KERC is not available for arbitration, the provisions of the Arbitration and Conciliation Act, 1996 shall apply.
- (c) Notwithstanding the existence of any disputes referred to arbitration, the Parties shall continue to perform their respective obligations under this Agreement and the Parties shall not withhold, for any reason whatsoever, when any arbitration proceeding is pending, payment of any undisputed amount that has become due under this Agreement.
- (d) KERC shall discharge the function of adjudicator upon the dispute between the buyers and the seller and to refer any dispute for arbitration.

## **ARTICLE 8**

### **INSURANCE**

#### **8.1 Insurance requirement**

(a) The Seller shall maintain in effect throughout the Term insurance policies and coverages (including exclusion, limitations, deductibles and endorsements) with respect to the Unit, that are required by Law or Financing documents and consistent with Prudent utility practices.

(b) Unless any such coverage is no longer available to the Seller on commercially reasonable terms (unless such unavailability is caused by a default by the Seller under the relevant insurance policy), the Seller shall not reduce the scope of such insurance coverage without the prior written consent of the Buyers. Such consent shall not be unreasonably withheld or delayed by the Buyers.

(c) The Buyers shall be named as an additional insured on the coverage set forth in Article 8.2 and its interest shall appear in each such policy. The Buyers shall be provided by or and behalf of each insurer issuing the policy or policies referred in Article 8.2 with a waiver of and rights to subrogation such insurers may have at any time against Buyers.

Provided that, in the event of the insurer not agreeing to the above, the Parties shall mutually resolve their respective rights and obligations under this Agreement.

#### **8.2 Specific insurance coverage**

The insurance policies and coverage to be maintained pursuant to Article 8.1 shall include,

- (i) General liability insurance to cover all properties and operations from all risks as required by Prudent utility practices;
- (ii) with respect to the intended operation period of the Unit, business interruption insurance;
- (iii) workers' compensation and employers' liability insurance;
- (iv) comprehensive third party liability insurance; and
- (v) any other insurance the Seller may reasonably deem necessary or appropriate.

#### **8.3 Substitute coverage**

If the designated coverage, or relatively comparable coverage, is unavailable on reasonable commercial terms to the Seller and it wants to reduce the amount or type of insurance required to be maintained, it shall inform the Buyers as to the maximum amount of available coverage that is possible to be purchased on commercially reasonable terms and shall obtain the consent of the Buyers.

#### **8.4 Insurance certificate**

The Seller shall cause its insurers or agents to provide the Buyers with certificates of insurance evidencing the policies and terms specified in this Article 8.

#### **8.5 Application of insurance proceeds and endorsements**

(a) All insurance claims pursuant to the policies specified herein shall be payable to the Seller and, subject to the express provisions hereof, the Seller shall be entitled to apply the proceeds of any such claims at its own discretion without any limitations or restrictions.

Provided that if the Seller is otherwise compensated for such insured event by the Buyers, the Seller shall hand over the proceeds of such insurance to the Buyers forthwith to the extent compensation has been paid by the Buyers.

(b) The Seller shall use its best efforts (but under no circumstances shall be Seller be deemed obligated) to negotiate for provisions in the Financing documents to provide for the insurance proceeds to be applied for the repair of the Unit.

(c) In the event that the Unit suffers a total loss then the relevant insurance proceeds shall be applied as under :

(i) full repayment of any outstanding debt,

(ii) the equity contribution of Seller to the extent that it has not been recovered through depreciation,

(iii) balance if any to the Buyers for being passed on to the consumers.

(d) Nothing contained in this Article shall relieve either party of the obligations under this Agreement.

**ARTICLE 9**

**INDEMNIFICATION AND LIABILITY**

**9.1 Indemnity by the Seller**

(a) The Seller shall indemnify the Buyers against any third party claim against the Buyers and its immediate contractors connected with the electrical facilities at the Interconnection point (“interconnection facility”), in respect of any loss or damage to property, death or injury to person and all expenses relating thereto (including, without limitation, reasonable legal fees) due to an event occurring before the termination of this Agreement and arising out of the design, construction, ownership, operation or maintenance of the Unit and resulting from any negligent act or omission of the Seller, without recourse to the Buyers. The Seller shall hold the Buyers and its immediate contractors connected with the interconnection facility fully indemnified in respect thereof.

(b) The indemnity shall not extend to, and the Buyers hereby waive any claims against the Seller for, and indemnifies the Seller, against any such loss, damage, death or injury suffered by the Buyers or their immediate contractors connected with the interconnection facility or the failure of the Buyers or their immediate contractors in connection with the interconnection facility to take reasonable steps in mitigation thereof.

(c) Notwithstanding anything to the contrary contained in (b) above, nothing in this Article shall apply to any loss, damage, cost or expense in respect of which, and to the extent that, the Buyers or their immediate contractors connected with the interconnection facility is otherwise compensated, indemnified or held harmless pursuant to the terms of applicable insurance coverage.

**9.2 Indemnity by the Buyers**

(a) The Buyers shall indemnify the Seller against any third party claim against the Seller in respect of any loss or damage to property, death or injury to person and all expenses relating thereto (including, without limitation, reasonable legal fees) due to an event occurring before the termination of this Agreement at the Unit or the interconnection facility and resulting from any negligent act or omission of the Buyers or their immediate contractors connected with the interconnection facility, without recourse to the Buyers. The Buyers shall hold the Seller, fully indemnified in respect thereof.

(b) The indemnity shall not extend to, and the Seller hereby waives any claims against the Buyers for, and indemnifies the Buyers, against any such loss, damage, death or injury suffered by the Seller or its immediate contractors connected with the interconnection facility or the failure of the Seller or its immediate contractors in connection with the interconnection facility to take reasonable steps in mitigation thereof.

(c) Notwithstanding anything to the contrary contained in (b) above, nothing in this Article shall apply to any loss, damage, cost or expense in respect of which, and to the extent that, the Seller or its immediate contractors connected with the interconnection facility is otherwise compensated, indemnified or held harmless pursuant to the terms of applicable insurance coverage or the Project Documents.

### **9.3 Notice of proceedings**

Each Party shall promptly notify the other Party of any claim or proceedings in respect of which it is entitled to be indemnified under this Article 9. Such notice shall be given as soon as reasonably practicable after the relevant Party becomes aware of such claim or proceeding.

### **9.4 Conduct of proceedings**

(a) Each Party shall have the right, but not the obligation, to contend, defend and litigate (and to retain legal advisers of its choice in connection therewith) any claim, action, suit or proceeding by any third party lodged or asserted against it arising out of any matter in respect of which it is entitled to be indemnified hereunder, and the reasonable costs and expenses thereof shall be subject to such indemnity.

Provided that the indemnifying party shall be entitled, at its option, to assume and control the conduct and defence (including with respect to any entry for appearance or consent to jurisdiction) of such claim, action, suit, or proceeding at its expense and through legal advisers of its choice, if it

- (i) gives a notice of its intention to do so to the indemnified party;
- (ii) acknowledges in writing its obligation to indemnify that party to the full extent provided by this Article; and
- (iii) reimburses that party for the reasonable costs and expenses previously incurred by it prior to the assumption of such defence by the indemnifying party.

(b) Neither party shall settle or compromise any claim, action, suit or proceeding in respect of which it is entitled to be indemnified by the other party without the prior written consent of that indemnifying party.

### **9.5 Consequential losses**

Other than as expressly provided for in this Agreement, neither party shall in any case be entitled to any indirect or consequential losses or damages, whether or not such losses or damages are subject to the indemnities in Articles 9.1 and 9.2.

### **9.6 Survival**

The provisions of this Article 9 shall survive termination of this Agreement.

## **ARTICLE 10**

### **FORCE MAJEURE**

#### **10.1 Definition of Force majeure**

(a) "Force majeure" means any event or circumstance or combination of events or circumstances met with by the Party affected, but only if and to the extent that

(i) such event or circumstance or combination of events or circumstances, despite the exercise of reasonable diligence, cannot be, or be caused to be, prevented, avoided or removed by such party; and

(ii) such event or circumstance or combination of events or circumstances materially and adversely affects (in cost and/or time) the ability of the party to perform its obligation under this Agreement, and such Party has taken all reasonable precaution, due care and reasonable alternative measures in order to avoid the effect of such event or circumstance or combination of events or circumstances and to mitigate the consequences thereof.

(b) Any event or circumstance or combination of events or circumstances meeting the description of an event of Force majeure which have the same effect upon the performance of any of the contractors/suppliers of the Seller shall constitute an event of Force majeure with respect to the Seller.

#### **10.2 Instances of Force Majeure**

No party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of the Agreement to the extent that such a failure is due to force majeure events such as war, rebellion, mutiny, civil commotion, riot, strike, lock-out, forces of nature, accident, act of God and any other reason beyond the control of concerned party. But any party claiming the benefit of this clause shall reasonably satisfy the other party of the existence of such an event and give written notice within a reasonable time to the other party to this effect. Generation/drawl of power shall be started as soon as practicable by the parties concerned after such eventuality has come to an end or ceased to exist.

(a) Subject to the provisions of Article 10.1, events of Force Majeure shall include, but not be limited to

(i) Fire, chemical or radioactive contamination or ionizing radiation, earthquakes, lightning, cyclones, hurricanes, floods, droughts or such other extreme weather or environmental conditions, unanticipated geological or ground conditions, epidemic, famine, plague, quarantine, other natural calamities and other acts of God;

(ii) explosion, accident, breakage of facilities, plant or equipment, structural collapse, or chemical contamination (other than resulting from an act of war, terrorism or sabotage), caused by a person not being the Affected party or one of its contractors or subcontractors or any of their respective employees or agents, and not being due to inherent defects of the affected facility or failure to properly operate the affected facility in accordance with Prudent utility practices;

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(iii) strikes, lock-outs, work to rule actions or similar labour difficulties not set forth in Article (viii) below (excluding such events which are site specific and attributable to the Seller);

(iv) air crash, shipwreck, train wrecks or failure or delays of transportation that were not reasonably foreseeable;

(v) non-availability, at any time when required, of water from a GOK agency or electrical energy from the Buyers as necessary for the operation of the Unit;

(vi) any interruption in the supply of fuel to the Seller for the Unit resulting from the withdrawal or material modification to any authorisation of the GoI or any force majeure applicable to the fuel suppliers which prevents fuel suppliers to supply fuel under a fuel supply contract;

(vii) acts of war (whether declared or undeclared), invasion, acts of terrorists, blockade, riot, public disorder, violent demonstrations, civil commotion and sabotage;

(viii) strikes, lock-outs, work to rule actions and other industrial action or labour disputes in the district or state of Karnataka or at the national level which are not primarily motivated by the desire to influence the action of an enterprise so as to preserve or improve conditions of employment (excluding such events which are site specific and attributable to the Seller);

(ix) with respect to the Seller only, failure or inability to obtain or renew any authorisation of GoI on terms and conditions as favourable in all material respects as those contained in the original authorisation relating to the Unit (other than due to a breach by the Seller of any such terms and conditions);

(x) any action or failure to act without justifiable cause by any instrumentality of GoI (including any action or failure to act without justifiable cause by any duly authorised agent of any instrumentality of GoI);

(xi) expropriation or compulsory acquisition of the Unit or the site or any material assets of the Seller relating to the Unit ;

(xii) Change in Law; and

(xiii) any event of Force majeure adversely affecting the performance of any party to any material contract with the Seller, GoK or the Buyers relating to the Unit.

Provided that such event of Force majeure is beyond the reasonable control of such party to the material contract.

Provided further that

(i) such circumstances, despite the exercise of reasonable diligence, cannot be or be caused to be prevented, avoided or removed by such Affected party to the material contract;

(ii) such event materially and adversely affects the ability of such Affected party to such material contract to perform its obligations under the contract; and

(iii) such Affected party to the material contract has taken all reasonable precautions, due care and reasonable alternative measures in order to avoid the effect of such event on the Affected party's ability to perform its obligation under the relevant contract and to mitigate the consequences thereof.

(b) A "Non-natural force majeure" means those events of Force majeure described in Articles 10.2(a) (v), (vi) {to the extent any such event is not directly related to or in direct response to, any employee policy or practice (with respect to wages or otherwise) of the Seller}, (vii), (viii), (ix), (x), (xi) (xii) and (xiii) or subject to Article 10.1, any event or circumstance having an effect similar to any of those listed or referred to therein.

(c) A "Natural force majeure" means those events of Force majeure described in Article 10.2 (a) (i), (ii), (iii) and (iv) {to the extent any such event is directly not related to, or in direct response to, any employee policy or practice (with respect to wages or otherwise) of the Seller}, or subject to Article 10.1, any event or circumstance having an effect similar to any of those listed or referred to therein.

### **10.3 Certain effects of Force majeure**

(a) Except as provided in Article 10.4, either party shall be excused from performance and shall not be construed to be in default in respect of any obligation there under for so long as the failure to perform such obligation shall be due to an event of Force majeure.

(b) If an event of Force majeure shall have occurred, the Parties shall consult with one another as soon as practicable concerning the effect of such event of Force majeure.

### **10.4 Notice of Force majeure: Procedure**

(a) As soon as possible following the date of commencement of any event of Force majeure, if either party desires to invoke such event of Force majeure, (subject to Article 10.2) as a cause for delay in the performance of any obligation hereunder, it shall advise the other party in writing of such date and the nature and expected duration of such event of Force majeure. As soon as possible and in any event within twenty four hours following the termination of such event of Force majeure, the party having invoked such event of Force majeure as a cause for such delay shall submit to the other party reasonable proof of the nature of such delay and its effect upon the time of performance.

(b) The Parties shall

(i) use their best efforts to remove or terminate as soon as practicable any event of Force majeure, including, without limitation, by recourse to mutually acceptable (which acceptance shall not be unreasonably withheld by either party) alternate sources of services, equipment material and construction equipment;

(ii) use their best efforts to prevent and reduce to a minimum and mitigate the effect or any delay occasioned by any event of Force majeure including by recourse to alternate sources of services, equipment and materials and construction equipment; and

(iii) use their best efforts to ensure resumption of normal performance of this Agreement after the termination of any event of Force majeure and shall perform their obligation to the maximum extent practicable as agreed between the Parties.

## **ARTICLE 11**

### **TERMINATION**

#### **11.1 Events of default by the Seller**

Each of the events described below shall be an event of default by the Seller.

(i) any willful and negligent failure by the Seller to operate in accordance with the provisions of this Agreement for more than forty five consecutive days after the Effective date.

(ii) the occurrence of any of the following events (other than as a direct result of an event of default by the Buyers):

(a) the passing of a resolution for the bankruptcy, insolvency, winding up, liquidation of or other similar proceeding relating to the Seller;

(b) the appointment of a trustee liquidator, custodian, or similar person in a proceeding referred to in (a) above, which appointment has not been set aside or stayed within sixty days of such appointment; or

(c) an order winding up otherwise confirming the Bankruptcy or insolvency of the Seller passed by a court having jurisdiction, which has not been set aside or stayed within sixty days.

(iii) any failure by the Seller to achieve a monthly Target availability equal to or in excess of sixty percent, other than as a result of an event of Force majeure or default by the Buyers, for a period of eighteen consecutive months.

(iv) any material misrepresentation by the Seller in any representation and warranty of the Seller set forth in Article 12, or the omission of any fact by the Seller, which renders any such representation and warranty materially misleading.

(v) the breach by the Seller of any of its material obligations under this Agreement {other than any such breach referred to in Article 11.1 (i) or (ii) } which is not remedied within sixty days after notice from the Buyers to the Seller stating that such a breach has occurred, identifying the breach in question in reasonable detail and demanding remedy thereof.

#### **11.2 Events of default by the Buyers**

Each of the events described below shall be an event of default by the Buyers, even if the same is the result of a force majeure event:

(i) the failure by the Buyers to make any payment under this Agreement when due and payable;

(ii) the letter(s) of credit (to the extent that is required and has been established pursuant to Article 6.9) cease to be in full force and effect at any time, other than to the extent caused by a breach by the Seller of its obligations there under

(iii) the occurrence of any of the following events (other than as a direct result of an event of default by the Seller):

(a) the passing of a resolution for the Bankruptcy, insolvency, winding up, liquidation of or other similar proceeding relating to the Buyers;

(b) the appointment of a trustee liquidator, custodian, or similar person in a proceeding referred to in (a) above, which appointment has not been set aside or stayed within sixty days of such appointment; or

(c) an order winding up otherwise confirming the Bankruptcy or insolvency of the Buyers passed by a court having jurisdiction, which has not been set aside or stayed within sixty days.

(iv) any material misrepresentation by the Buyers in any representation and warranty of the Buyers set forth in Article 13, or the omission by the Buyers of any fact which renders any such representation and warranty materially misleading; and

(v) the breach by the Buyers of any of its material obligations under this Agreement {other than any such breach referred to in Article 11.2 (i)} which is not remedied within sixty days after notice from the Seller to the Buyers stating that such a breach has occurred, identifying the breach and question in reasonable detail and demanding remedy thereof.

### **11.3 Termination upon an event of default by the Seller or the Buyers**

Upon the occurrence of an event of default by the Seller or the Buyers, the following procedure shall apply to terminate this agreement:

(i) Subject to (iii) below, if applicable, the party which is not the subject of such event of default may give a notice (the "termination notice") to the other party, specifying in reasonable detail the event of default by the Seller or the Buyers, as the case may be, giving rise to such termination notice, and the date on which the party giving such termination notice proposes to terminate this Agreement, which date shall not be less than thirty days after the date of such notice.

Provided that in case of an event of default by the Buyers mentioned in Article 11.2 (i), involving an amount less than Rs. 30 crores, such date shall not be less than sixty days after the date of notice.

(ii) During the period of thirty days or sixty days or such longer period as the case may be, following the giving of such termination notice, the Parties shall having regard to the circumstances, consult as to what steps shall be taken with a view to mitigate or remedy the consequences of the relevant event.

(iii) The Seller shall not be entitled to terminate this Agreement in connection with any event which constitutes both an event of Force majeure pursuant to Article 10.2 (a)

**11.4 Termination other than upon an event of default by the Seller or the Buyers**

(a) This Agreement shall terminate on the last day of the term subject to both parties mutually agreeing to extend this agreement.

(b) Subject to the requirements of Article 10.4, if any event of Force majeure prevents, or it is apparent that such an event of Force majeure will prevent, the Seller from operating the Unit for a continuous period of more than three hundred and sixty days or a further period, if so agreed to between the Parties then either party may terminate this Agreement upon thirty days prior written notice to the other party.

(c) Failure of the Seller to cause this Agreement to be effective within Five years of the execution of this Agreement or to commission the plant within the date agreed to in this contract. The agreement shall stand automatically terminated and the Buyers would not be liable for any costs incurred by the Seller or any other third party in affecting this agreement. The Seller shall make good of all costs incurred by the Buyers for facilitating this Agreement.

**11.5 Other rights and remedies**

Upon the breach by either party thereto of any covenant or warranty hereunder, the party damaged by any such default or breach may, in its sole discretion, in addition to exercising any other remedies provided for hereunder, proceed to protect and enforce its rights, to recover any damages to which it may be entitled (including all costs and expenses reasonably incurred in the exercise of its remedy).

## **ARTICLE 12**

### **REPRESENTATION AND WARRANTIES**

#### **12.1 Representation and warranties by the Seller**

The Seller represents and warrants as of the date hereof that:

(a) The Seller is a limited liability company duly incorporated under the Companies Act, 1956 and has all requisite legal power and authority to execute this Agreement and to carry out the terms, conditions and provisions hereof ;

(b) all legislative, administrative and other governmental action required to authorise the execution, delivery and performance by the Seller of this Agreement and the transactions contemplated hereby have been taken and are in full force and effect except to the extent of actions which by the terms hereof are to be taken at a later time;

(c) This Agreement constitutes the valid, legal and binding obligation of the Seller, enforceable in accordance with the terms hereof except as enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, moratorium or other similar laws;

(d) There are no actions, suits or proceedings pending or, to the best knowledge of the Seller, threatened, against or affecting the Seller before any court, administrative body, or arbitral tribunal that might materially and adversely affect the ability of the Seller to meet and carry out its obligations under this Agreement; and

(e) The execution, delivery and performance by the Seller of this Agreement have been duly authorised by all requisite corporate action and will not contravene any provision of, or constitute a material default under any other Agreement or instrument to which it is a party or by which it or its property may be bound.

#### **12.2 Representations and warranties by the Buyers**

The Buyers represent and warrant as of the date hereof that :

(a) The Buyers are limited liability companies duly incorporated under the Companies Act, 1956 and have all requisite legal power and authority to execute this Agreement and to carry out the terms, conditions and provisions hereof ;

(b) All legislative, administrative or other governmental action required to authorise the execution, delivery and performance by the Buyers of this Agreement and the transactions contemplated hereby have been taken and are in full force and effect;

(c) This Agreement constitutes the valid, legal and binding obligation of the Buyers, enforceable in accordance with the terms hereof except as the enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, moratorium of other similar laws;

(d) There are no actions, suits or proceedings pending initiating or threatened against the Buyers before any court or administrative body or arbitral tribunal which might materially and adversely affect the ability of the Buyers to meet and carry out its obligations under this Agreement; to the best knowledge of the Buyers; and

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(e) The execution, delivery and performance of this Agreement by the Buyers have been duly authorised by all requisite action and will not contravene any provision of or instrument to which it is a party or by which it or its property may be bound.

**ARTICLE 13**

**ASSIGNMENT**

**13.1 General**

- (a) Subject to clause (c) below, neither party may assign or otherwise transfer its rights or obligations under or pursuant to this Agreement without the prior written consent of the other party, which consent shall not be unreasonably withheld.
- (b) For the purpose of financing the renovation, modernisation, replacement, and/or uprating of the Unit, the Seller may assign/create a security interest over its rights and interests under or pursuant to this Agreement, and other document, the site, the moveable property and intellectual property of the Seller or the revenues or any of the rights or assets of the Seller.
- (c) The Buyers shall have the right, subject to the consent of the Government of Karnataka, to assign its rights and delegate its obligations under this Agreement to any entity or entities ("Permitted Transferee/s") formed for the privatization or other restructuring of all or substantially all of the assets of the Buyers, provided that (i) the Permitted Transferee expressly assumes the obligations of the Buyers under this Agreement and (ii) the Permitted Transferee/s (by itself or collectively) are either the owners or the operators of all or substantially all of the Buyer's System and/or are the purchaser and seller of all or substantially all of the bulk power supply in Karnataka.

**13.2 Consent of the Buyers**

The Buyers hereby irrevocably consents, to the extent permitted by Law, to the assignment of the right of the Seller right hereunder to the Lenders financing renovation, replacement and/or modernization up rating of the Unit and agrees, if required by such Lenders, to make payments owing from the Buyers to the Seller directly into a collateral security account thereunder, to accept in the event of the default under the Financing documents, as a substitute for the Seller under this Agreement, the agent for such Lenders, any assignee, designatory or transferee of such agent, of any acquirer of the Seller upon a foreclosure sale on behalf of such Lenders of the Seller's interest in the Unit.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed on .....

**BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED.**

By:

Witness:

.....

AUTHORISED SIGNATORY

Witness:

.....

**MANGALORE ELECTRICITY SUPPLY COMPANY LIMITED.**

By:

Witness:

.....

AUTHORISED SIGNATORY

Witness:

.....

**HUBLI ELCTRICITY SUPPLY COMPANY LIMITED.**

By:

Witness:

.....

AUTHORISED SIGNATORY

Witness:

.....

**GULBARGA ELECTRICITY SUPPLY COMPANY LIMITED.**

By:

Witness:

.....

AUTHORISED SIGNATORY

Witness:

.....

**CHAMUNDESHWARI ELECTRICITY SUPPLY CORPORATION LIMITED.**

By:

Witness:

.....

AUTHORISED SIGNATORY

Witness:

.....

**KARNATAKA POWER CORPORATION LTD.**

By:

Witness:

.....

AUTHORISED SIGNATORY

Witness:

.....

**ANNEXURE - XII**

**PROJECT CHARACTERISTICS**

**1.0 Electricity Characteristics**

- 1.1 The nominal steady state electrical characteristics of the system are as follows:
- (a) three phase alternating current at 50 Hertz plus 5% or minus 3%
  - (b) a nominal voltage of 400 KV or 220KV + 10% to - 10%
  - (c) a power factor (at maximum rated power) between 0.85 lagging and 0.95 leading.
- 1.2 The Facility shall be designed to be and shall be capable of being synchronized and operated within a frequency range of 47.5 to 51.5 Hertz and voltage of 440 KV and 360 KV in case of 400KV system and 242 KV and 198 KV in case of 220KV system. Operation outside the frequency range specified in this clause will result in automatic isolation of the Facility from KPTCL/ Buyers System.
- 1.3 Operation of the Facility outside the voltage range specified in Item 1.2 above will result in abnormal operating condition & hence further results in operation of protective equipment
- 1.4 The Unit shall be capable of generating and delivering or absorbing reactive power corresponding to a power factor as specified in Item 1.1(c) above.

**2.0 Facility Characteristics**

- (a) Rated Unit Generation Capacity      500 MW (gross)
- (b) Number of Units                              One
- (c) Generator Rating                            500MW at 21KV, 50HZ at 0.85 lag Power Factor at 3000 rpm(including margin for fluctuations in electricity characteristics under 1.0 above and with a margin of 525 MW at VWO

(d) Reactive Power

The Company agrees to deliver (take) reactive power to follow KPTCL/ Buyers System's parameters to the extent of the capability of the Facility's generators at the ambient conditions present from time to time. However, the Company shall not be obligated to deliver (take) reactive power in order to help remedy stability or voltage problems on KPTCL/ Buyers System or to deliver active power that would cause a violation of technical limits described in this Annexure 5. If KPTCL/ Buyers System conditions are such that the Facility may only operate within technical limits by backing down energy output, the Company shall, for all purposes under the Power Purchase Agreement (including Section 7.1 of the Tariff Notification) be credited for such lost, generation (plus associated auxiliary consumption, as if such reduction had occurred).

(f) Station Step-up Transformer Capacity

To be sized with capacity to handle the maximum net generation.

### 3.0 Operating Characteristics

#### 3.1 Startup and Shutdown

The plant boiler will be started in accordance with the cold, warm and hot start up curves as recommended by the manufacturer. Preliminary curves are attached for informational purposes only. Final curves will be generated during the detailed design phase of the Project and will be substituted for the preliminary curves attached. The turbine generator will also have limitations for startup, which will be incorporated into the plant control system.

#### 3.2 Minimum Load Operation

The plant can maintain stable operation at 50% TMCR while firing coal. The plant will utilize combined fuel firing (coal/oil) only during start-up and shut-down.

#### 3.3 Load Changes

The Facility's capability for changing load will not be less than 5 MW per minute for each Unit during normal operation, with a higher ramp rate for emergencies and as guided by Turbine Stress Evaluator (TSE). (The minimum ramp up rates for "cold" and "warm" starts are set out in Section 7.4(d).)

#### 3.4 Emissions Standards

Nitrogen Oxides 260 gm/giga jules

SPM 80 mg/NM<sup>3</sup> (with all field in service)  
100 mg /NM<sup>3</sup> (with one field out of service)

Stack Height of 275m

The foregoing parameters may be modified from time to time to conform to the requirements of Statutory Authorities.

#### 3.5 Noise Levels

Facility Site Boundary 75 dBA – day (6.00AM to 9.00PM)  
70 dBA – night (9.00PM to 6.00AM)

#### 3.6 Water Pollution Standards ( As per Indian Standards and as per Environmental (Protection) Rules 1986 issued by Ministry of Environment and Forest.

##### (a) Ash pond effluent

pH - 6.5 to 8.5  
Suspended Solids - less than 100mg/ltr  
Oil and Grease - less than 20mg/ltr

(b) Steam Generator blow down

Suspended solids - less than 100mg/ltr  
Oil and Grease - less than 20mg/ltr  
Copper (Total) - less than 1.0mg/ltr  
Iron(Total) - less than 1.0mg/ltr

( c ) Cooling Tower blow down

Free available Chlorine - less than 0.5mg/ltr  
Zinc - less than 1.0mg/ltr  
Chromium (Toatl) - 0.2mg/ltr  
Phosphate - less than 5.0mg/ltr

**4.0 Maintenance Limits**

The maintenance on the Facility will be conducted consistent with the individual manufacturers' guidelines for each piece of equipment. The maintenance schedules will be coordinated with the Buyers as required by Article 3.8. The overhaul and regular inspections of the Facility will be planned to occur with the intent to avoid interruptions to service caused by failure of components. The durations of the overhaul and inspections will be minimized by implementing a preventative maintenance program to supply scheduling of the necessary work in advance and obtaining the necessary spare parts for detected failures.

Note: The above data is provisional and subject to confirmation by EPC Contractor at the time of finalisation of operating procedures.

**ANNEXURE VII**

**The coal limitation specification:**

SI No.	Description	Expected	Range	
			Min	Max
1.0	Total Moisture (As received)	9%	6.0%	15.0%
2.0	Inherent Moisture (Air dried)	6.7 %	6.0%	9.0%
3.0	Volatile Matter ( Air dried)	25.5 %	22.0%	30.0%
4.0	Ash (Air dried)	25.3 %	18.0%	32%
5.0	Fixed carbon	42.5%	37.0%	45.0%
6.0	Gross Calorific Value (As received) kCal/Kg	4500	4000	4500
7.0	Carbon	79.9%	72.3%	82.5%
8.0	Hydrogen	4.4%	2.8%	5.1%
9.0	Nitrogen	1.7%	1.4%	2.0%
10.0	Oxygen	13.6%	11.2%	18.3%
11.0	Sulphur	0.4%	0.03%	1.3%
12.0	Total Sulphur	0.69%	0.73%	1.68%
13.0	Hardgroove Grindability Index	56	49	65
14.0	Coal Size		0-25 mm (0-2 mm fines not >20%)	

**ANNEXURE – XIII**

**DESCRIPTION OF THE FACILITY AND SITE**

The Facility consists of One no. of 500MW (gross) / 462.5 MW (net) coal-fired electric generating Unit, including auxiliary equipment and associated supporting facilities.

The Facility will have certain Common Facilities, including external coal transportation, coal handling, ash disposal, water system, wastewater treatment and other facilities. The Facility shall use coal that shall be received at the plant site. The coal shall be transported to the site by rail.

The main power block of the Facility shall consist of a steam generator of the 1x500MW unit, 100% coal fired, rated to generate 1600t/Hour at 178.5Kg/Sqcm(Abs) pressure and 540°C temperature. The steam generator will be equipped with facilities for fuel oil firing for start up and for flame stabilization at low loads. The turbine generator at 3000 rpm will produce 500MW output at 0.85 pf at Generator terminals. The steam generator will be semi-outdoor equipment while the turbine generator with all auxiliary feed cycle equipment will be located indoor. Steam generators will be provided with low oxides of nitrogen burners to keep the emission of oxides of nitrogen at the minimum. The steam generator will also be provided with electrostatic precipitators to limit the particulate matters in the flue gas.

The source of cooling water make-up will be from Maralihalla stream near Danapur Village located at about 37.1 Km from the plant site.

Ash and fly ash will be disposed of in accordance with the directives of the statutory authorities.

The electric power will be delivered to the grid at 400 KV and for this purpose the Facility will have its own 400 KV Switchyards within the Plant boundary. This Switchyard will be outdoor type with 'one and half breaker scheme'. Buyers shall provide (1) 400KV outgoing line circuits from the switchyard of the power plant by loop-in/loop-out arrangement to 400 KV Davangere-Raichur line. (2) 220KV outgoing line circuits from the switchyard of the power plant by loop-in/loop-out arrangement to 220 KV Lingapur-Alipur line. Metering points will be provided in the Switchyard Control room for all the Four (4) lines for measuring the net generation. Power Line Carrier Communication (PLCC) system will be provided by the KPTCL/ Buyer for the transmission lines. The protection scheme used for the Switchyard will be compatible with Indian standards and relevant practices followed in India. The Switchyard will be controlled from the Powerhouse Control room /Switchyard Control room for which necessary number of control and relay panels will be provided. The switchyard control and monitoring functions will be performed by a microprocessor based Supervisory Control And Data Acquisition system (SCADA).

Construction power will be drawn from grid by 66KV/11KV system. For this purpose, the Buyer in whose jurisdiction the plant is located has identified a line up to the plant and Company has provided necessary receiving sub-station, step down transformer, switchgear, etc. The startup power will be drawn from either 400KV Guttur or Raichur substation of KPTCL through the 400 KV lines or 220KV Lingapura or Alipur substation

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through 220KV lines and Switchyard to be constructed as part of the plant. The Seller will avail the construction and startup power or any other power from the jurisdictional distribution licensee.

The Facility is located in Bellary District of Karnataka, comprising villages of Kudatini (549.87 acres) and Thimmalapura (137.6 acres).

The site is 22km away from Bellary, 40km away from Hospet and is adjacent to National Highway-63 between Bellary city and Hospet town. The nearest Railway station is at Kudatini. The railway line between Kudatini and Toranagallu is about 2.5km from the plant boundary.

**Salient Features**

Sl. No.	Equipment	Description
1	<b>Steam Generator</b>	
	Type	Coal fired, single drum, two pass design, assisted circulation, radiant, reheat, balance draft, out door type
	Steam Generator with Auxiliaries	One
	Capacity (MCR)	1600 T/hour
	Pressure at SH outlet	Approximately 178.5 kg./ sq.cm (abs) at TMCR
	Temperature at SH outlet	540 deg. C
2.	<b>Steam Turbine Generator</b>	
	Type	Reheat condensing with regenerative feed water heating including de-aerator
	Number	One
	Capacity	500 MW
	Pressure at TMCR	170.0 kg./ sq.cm (abs)
	Temperature at TMCR	537 deg. C
	Boiler Feed Pumps	2x50% capacity steam turbine driven and 1x50% capacity Motor driven
3	<b>Condenser</b>	
	Type	Steam surface condenser, 2 Cooling water passes, Bottom mounted single shell with divided water box construction

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	<p>Condenser pressure</p> <p>Tube material</p> <p>Type of cooling</p>	<p>76 mm Hg. Vacuum (back pressure)</p> <p>Stainless steel tubes TP 304</p> <p>Clarified raw water</p>
4	<p><b>Generator</b></p> <p>Capacity</p> <p>Power Factor</p> <p>No.</p> <p>Cooling – Rotor</p> <p>Stator</p>	<p>500 MW (includes margin for VWO and fluctuations in electrical characteristics)</p> <p>0.85 lag (Design value)</p> <p>One</p> <p>Hydrogen</p> <p>Water</p>
5	<p><b>Coal Handling Plant (Internal)</b></p> <p>Track Hopper</p> <p>Wagon Tippler</p> <p>Crusher</p> <p>Conveyor Design Capacity</p> <p>Stacker cum Reclaimer</p>	<p>1 No. - 200 metre length</p> <p>2 Nos. -Tippling capacity 22 Tips per hour</p> <p>2 Nos. – Design capacity 1250 Tonnes per hour</p> <p>1250 Tonnes/hr.</p> <p>1 No. Stacking design capacity 1250 tonnes/hr. Reclaimer capacity Average capacity – 700 tonnes/hr. Peak capacity – 1000 tonnes/hr</p>
6	<p><b>Ash Handling</b></p> <p>Design capacity</p> <p>Bottom Ash</p> <p>Fly Ash</p> <p>Collection and Disposal of Bottom Ash</p> <p>Collection and Disposal of Fly Ash</p>	<p>1 hr. 50 min. in a shift of 8 hrs. at the rate of 150 TPH</p> <p>3.5 hrs. in a shift of 8 hrs. at the rate of 250 TPH</p> <p>In accordance with directions of statutory authorities</p> <p>In accordance with directions of statutory authorities</p>

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7	<b>River Water intake system</b>	
	Source	Maralihalla Stream near Danapur / Hebbal Village
	Pumps	5 Nos. (4 working + 1 standby)
	Capacity	1900 cu.m. per hour each, Head - 180 metres
	Piping	Approximately 37.1 km
8	<b>Circulating Cooling Water System</b>	
	CW pump capacity	4 x 33 1/3% capacity, 19100 cu.m per hour each (3W + 1SB)
	Cooling tower	Natural draft, 1 No.
	Wet Bulb temperature	27 deg. C
9	<b>Water Treatment Plant</b>	
	RODM Plant	2 streams, output capacity of 75 cu.m.per hour each stream
	Raw water clarifier	2400 cu.m. per hour
	Raw water pumps	3x50% capacity each of 1350 cu.m.per hour
10	<b>Electrical System</b>	
	Generator Transformer	621 MVA (3 nos. of 207 MVA 21/400√3 single phase transformers) Ynd11
	Start up transformer/ Station Transformer	1 no. 220/11.5 KV 50 MVA, Ynyno 1 No.80/40/40 MVA, 400/11.5/11.5 KV, Ynynyno
	Unit Transformer	2 nos. per unit Dyn1, 25 MVA(ONAF), 21/11.5 KV
11	<b>Switchyard</b>	
	Type	Outdoor
	Step up voltage	400 KV, one and half breaker system
12	<b>Electrical System Characteristics</b>	
	Voltage and Range	400 kV, + 10%, -10%
	Grid frequency zone	50 Hz, +3%, -5%

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13	<b>Chimney</b> Nos. Height Construction	One 275 mtr. single flue
14	<b>All Liquid Effluents to comply with applicable requirement of MoEF and KSPCB</b>	
15	<b>Gross station heat rate</b>	2450 kcal / kwh
16	<b>Auxiliary Power Consumption</b>	7.5%

The Ash disposal shall be as directed by the State Pollution Control Board.

**ANNEXURE - XIV**

**INTERCONNECTION POINT AND METERING EQUIPMENT**

Interconnection Point(s) shall be:

- (a) For overhead line connections, Buyers will procure the installation of dead end towers close to the switchyard and the installation of lines and down leads to the Seller's switchyard gantries with insulators.
- (b) For the power line carrier protection facility the Seller will install all equipment for the Power Plant side of the transmission lines and matching PLCC panels for the remote end will be supplied as loose supply items. Buyers will install all other equipment such as wave trap, coaxial cables, line matching units etc. for the remote end.
- (c) For Buyers check metering, the Seller will install suitable dedicated metering cores on its relevant CTs. Such metering cores/windings shall have sealing arrangements.

## **ANNEXURE - VI**

### **TESTING PROCEDURES**

The following procedures set forth in this Annexure VI are to be used to determine the net electrical generating capacity of each Unit ("**Tested Capacity**") for purposes of (i) the initial capacity test required under Article 2A of the Agreement ("**Initial Capacity Test**") and (ii) the annual performance test required under Article 3 of the Agreement ("**Annual Capacity Test**"). Procedures are also set forth for determining whether a Unit is capable of operating within the limits for the electrical characteristics in Annexure XII ("**Electrical Characteristics Test**"). The Initial Capacity Test, the Annual Capacity Test and the Electrical Characteristics Test are individually referred to as a "**Test**" and collectively referred to as the "**Tests**".

#### **1. General**

- 1.1 Prior to conducting any Test, (i) the necessary plant systems shall have been cleaned, checked and commissioned, (ii) the Unit shall be inspected and corrective maintenance, if required, shall be performed to repair any damaged equipment, (iii) the tightness of the condenser and boiler shall be checked and (iv) the boiler shall be operated at test load for at least two hours in order to verify a steady state working condition.
- 1.2 During the performance of any Test, the Unit shall be operated within its design limits and specifications in accordance with Prudent Operating Practices.
- 1.3 The Tests shall be conducted in accordance with the procedures and methodologies recommended by the ASME power test codes or other industry testing procedures mutually acceptable to the Parties. The Tests shall be conducted by the Seller or, at the option of the Seller, the Contractor. The Seller shall be responsible for providing additional instrumentation to the extent such instrumentation is not in place. All instrumentation will be properly calibrated and installed to predefined international standards.
- 1.4 The Transmission Utility/ Buyers shall have the right to attend and monitor any Test. The Company shall give KPTCL/ Buyers at least 24 hours' advance notice of the start of any Test to allow KPTCL/ Buyers to exercise or waive its attendance and monitoring rights.
- 1.5 The Commission may have the right to attend and monitor the Initial Capacity Test for the Unit. The Seller shall give the Commission at least 48 hours' advance notice of the start of any Initial Capacity Test to allow the Commission to exercise or waive its attendance and monitoring rights.
- 1.6 During the performance of any Test, the Transmission Utility /Buyers representatives shall, subject to safety regulations and confidentiality restrictions, have full access to the Facility and the Site and shall be allowed to check that the Tests are being conducted in accordance with the established procedures .the Transmission Utility / Buyers shall have the right to review all test data and results.

**2. Testing Procedures for Initial Capacity Test and Annual Capacity Test**

- 2.1 The periods for all capacity Tests required under this Agreement shall be mutually agreed to by the Parties consistent with customary practice and Prudent Operating Practices, provided that (i) the period for the Initial Capacity Test shall be 72 hours and (ii) the period for the Annual Capacity Test (and any retests thereof) shall be 24 hours.
- 2.2 The Unit shall be in its full base-load operating mode with its voltage regulator and governor in service. All major components should be operating at their normal pressures, temperatures and flows. All necessary safety and environmental equipment and systems shall be in service. No special adjustments to the Unit will be made that are inappropriate for normal base-load operation, except that the turbine inlet valve start-up strainers may be removed prior to any Test.
- 2.3 The Company shall have the right to determine when the Tests are conducted, subject to terms of this Agreement.
- 2.4 The Tested Capacity of a Unit shall be based upon the following referenced ambient conditions:

- Ambient Air Dry Bulb Temperature 30°C
- Cooling Tower Make-Up Temperature 32°C
- Atmospheric Pressure 1013 mbar
- Ambient Wet Bulb Temperature 27.5°C -

Power Factor Level of 0.85 lagging, 0.95 leading.

- 2.5 Prior to conducting any Test, the Company, the Transmission Utility / Buyers shall agree on (i) the technical content of a "Capacity Test Report", and (ii) the data which relate capacity to ambient conditions and power factor.
- 2.6 Ambient conditions and power factor existing during each Test shall be recorded and used to adjust the megawatts recorded to the referenced conditions. If the conditions on the Transmission Utility / Buyers System during the performance of a Test are outside the technical limits given in Annexure - XII, the Test will be repeated or continued (as required by the relevant test procedures) as soon as conditions are again within such technical limits.
- 2.7 The net power, voltage, power factor and current output will be measured at the high voltage side of the generator step-up transformers. The three-wattmeter method shall be used for Test measurements.
- 2.8 Critical pressures, temperatures and the net electrical generating capacity shall be recorded for every hour during the Test period. The net electrical generating capacity for each hour shall equal the average capacity during such hour. Tested Capacity with respect to any Test shall be the average of each of the hourly capacity values during the period of the Test.

**3. Electrical Characteristics Test**

- 3.1 An Electrical Characteristics Test shall be conducted during the performance of the Initial Capacity Test.
- 3.2 The Electrical Characteristics Test shall be deemed satisfactorily completed if all of the following conditions are satisfied:
  - 3.2.1 The Unit operates within the voltage limits set forth in Annexure - XII for the duration of the Initial Capacity Test. If voltage test cannot be conducted during the Initial Capacity Test due to constraints or limitations on the Transmission Utility / Buyers System, data supplied by the manufacturers of the generator step-up transformers and the generators shall be used to establish the capability of the Unit to operate within the specified voltage limits.
  - 3.2.2 The Unit operates within the frequency limits set forth in Annexure - XII for the duration of the Initial Capacity Test.
  - 3.2.3 The Unit operates within the power factor ranges set forth in Annexure - XII for the duration of the Initial Capacity Test. If power factor tests cannot be conducted during the Initial Capacity Test due to constraints or limitations on the Transmission Utility / Buyers System, data supplied from the manufacturers of the generator step-up transformers and the generators shall be used to establish the capability of the Unit to operate within the specified power factor ranges.

**ANNEXURE XV**

**COAL SAMPLING AND ANALYSIS PROCEDURES**

COAL WEIGHMENT SYSTEM

WEIGHT OF COAL

MEASUREMENT OF WEIGHT OF COAL

COAL SAMPLING AND ANALYSIS

SAMPLING PROCEDURE

PROCEDURE FOR ANALYSIS

NON CONFORMANCE

WITNESSING OF SAMPLING AND ANALYSIS

INDEPENDENT INSPECTION AGENCY

DISAGREEMENT ON TEST RESULTS

ARRANGEMENT BETWEEN KPCL AND BUYERs.

**THE ABOVE INFORMATION NEEDS TO BE FURNISHED BY KPCL**