



കേരളം കേരल KERALA

AE 450692

**POWER PURCHASE AGREEMENT**

This agreement entered into on this the 14<sup>th</sup> day of July (Month) 2014 (Year) at Thiruvananthapuram BETWEEN Kerala State Electricity Board Limited, a company formed and incorporated under the Companies Act, 1956, having its registered office at Vidyuthi Bhavanam, Pattom, Thiruvananthapuram, hereinafter referred to as 'KSEBL' (which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assignees) as a party of the first part, AND Ayyappa Hydro Power Limited, a company incorporated under the Companies Act, 1956, having its registered office at 'EDCL House', 1A, Elgin Road, Kolkata - 700 020 (hereinafter referred to as 'the Company' (which expression shall, when the context so admits or implies be deemed to include its successors, legal heirs and/or assignees as well) of the second part.

WHEREAS:

- A. In pursuance of the Government of India policy regarding participation of the private sector in development of renewable hydel projects, the Government of Kerala (GOK) has proposed to encourage and facilitate the development of Small/Mini Hydel projects as captive and independent power projects to exploit the hydel potential and to develop low cost generation sources within the state. Government of Kerala allotted the Karikkayam Small Hydro Project of 12 MW capacity located at Chittar in survey No.968, Ranni Taluk, Pathanamthitta District to M/s. Travancore Electro Chemical Industries Ltd (TECIL) as Captive Power Project (CPP) vide G.O. (MS) No.9/94/PD dated 19.05.1994.

  
CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4



For AYYAPPA HYDROPOWER LTD

  
DIRECTOR/ AUTHORIZED SIGNATORY

- B. As per order G.O. (MS) No. 23/97/PD dated 20.06.1997 Government of Kerala accorded revised sanction to enhance the capacity of Karikkayam Small Hydro Project to 15 MW.
- C. Government of Kerala as per order G.O. (MS) No. 02/2003/PD dated 16.01.2003 and its amendments dated 17.03.2006 issued guidelines for the allocation of Small / Mini Hydel projects as captive and independent power projects to private sector.
- D. Since M/s. TECIL failed to complete the project and based on their request, Government of Kerala vide orders G.O.(MS) No. 122/05/Ind dated 19.09.2005 and G.O (Rt) No. 9/06/PD dated 11.01.2006 permitted M/s. TECIL to convert the Karikkayam Small Hydro Project from CPP category to Independent Power Project (IPP) category in order to avail loan assistance for the project.
- E. Government of Kerala, vide order G.O. (MS) No. 14/2006/PD dated 22.05.2006, accorded sanction to M/s. TECIL to transfer the ownership of Karikkayam Small Hydro Project to M/s. Ayyappa Hydro Power Limited (AHPL) for a period of 30 years from the date of commissioning of the project and permitted KSEB to enter into fresh agreement with the new promoter after satisfying their technical and financial status.
- F. As per the Implementation Agreement signed between Energy Management Centre, the nodal agency of Government of Kerala for small hydro projects, and AHPL, the Company has to sell the entire power produced from the Karikkayam Small Hydro Project of 15 MW capacity to Kerala State and KSEBL.

NOW, THEREFORE, in view of the foregoing premises and in consideration of the mutual covenants and agreements hereinafter set forth, KSEBL and the Company (each together with their respective successors and assignees) intending to be legally bound, HEREBY AGREE AS FOLLOWS.



**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**



**DIRECTOR/ AUTHORISED SIGNATORY**




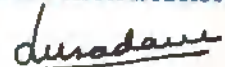
**ARTICLE 1  
DEFINITIONS AND INTERPRETATIONS**

**1.1 Definitions**

Wherever the following terms appear in this agreement, whether in the singular or in the plural, present or past tense, they shall have the meaning stated below, unless repugnant to the context:

- (a) **"Agreement"** means this agreement including all appendices, exhibits and schedules together with any amendments thereto as may be made by mutual consent of both the parties in writing.
- (b) **"Authorised Agency"** means any agency duly authorized by Government for the purpose.
- (c) **"Auxiliary Power Consumption"** means the difference between the number of units (kWh) generated by the Project as measured at the generator terminals at each generator unit and the number of units (kWh) as measured at the Delivery Point, including transformation losses (which shall be limited to 1% of energy generated).
- (d) **"Billing Date"** means the 5<sup>th</sup> day after the Metering Date.
- (e) **"Billing year"** shall mean the period beginning on the Commercial Operation Date and ending at 12.00 midnight of March 31<sup>st</sup> of the following year. Thereafter each successive billing year shall begin on April 1<sup>st</sup> and end on March 31<sup>st</sup> of the following year, except that the final billing year shall end on the date of expiry of the term or on termination of this agreement, whichever is earlier.
- (f) **"BOOT"** means Built, Own, Operate and Transfer the project in accordance with the prudent utility practices as per the terms and conditions set forth in this agreement and implementation agreement.
- (g) **"BOOT Period"** shall have the meaning assigned to it in the Implementation Agreement:
- (h) **"Business Day"** shall be construed as a day other than a Sunday on which the commercial bank and KSEBL are open for business in Thiruvananthapuram.
- (i) **"Commission"** means The Kerala State Electricity Regulatory Commission.
- (j) **"Change in Law"** shall have the meaning ascribed to it in the Implementation Agreement.
- (k) **"Check Meter"** means any meter and/or metering device of accuracy class equivalent to the Main Meter installed and maintained by KSEBL at the cost of the Company at the "Interconnection Point" to measure the delivery and receipt of energy and power for the purpose of checking the Main Meter.
- (l) **"Clearances"** shall mean the clearances as mentioned in Schedule 5.


  
CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vayalunji, Thiruvananthapuram

For **AYYAPPA HYDROPOWER LTD**  
  
DIRECTOR/ AUTHORISED SIGNATORY

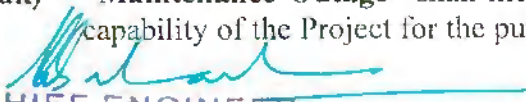
- (m) **“Commercial Operation Date (COD)”** shall mean with respect to each generating unit, the date on which such generating unit marks entry into commercial service and with respect to the Project the date on which the Project marks commercial operation pursuant to the Performance Tests demonstrated by the Company before KSEBL or any other agency authorized by the Government pursuant to Article 4 hereof.
- (n) **“Day”** shall mean 24 (twenty four) hours period beginning at 0.00 Hrs Indian Standard Time and ending at 24.00 Hrs on the same day.
- (o) **“Date of Completion”** means the Commercial Operation Date (COD).
- (p) **“Delivered Energy”** means the total energy delivered and metered at the Interconnection Point.
- (q) **“Design Energy”** means the energy to be generated by the Project in a year as detailed in the hydrology study contained in the approved Techno Economic Feasibility Report (TEFR).
- (r) **“Dispute”** shall have the meaning ascribed thereto in Article 15 hereof.
- (s) **“Delivery Point”** shall be the point or points at which interconnection is made between the Interconnection Facilities of the Company and the grid system of KSEBL.
- (t) **“Due Date of Payment”** means the 10<sup>th</sup> business day after Billing Date excluding the billing date.
- (u) **“Electricity Act 2003”** or **“Act 2003”** means the Electricity Act, 2003.
- (v) **“Evacuation System”** shall mean transmission facilities built from the generator switchyard of the project at 110 kV (the Interconnection Point) to nearby transmission line and utility substation.
- (w) **“Equity”** means the amount spent on project cost equal to the sum of:
- i) Paid up capital and premium contributed by the promoters, the public or any other persons towards the share capital of the Company.
  - ii) Any portion of loan, debenture or other obligation converted as equity.
  - iii) Any other contributions by the promoters or others, as approved by the Government / KSEBL, where no interest or other similar remuneration is charged to KSEBL / Government.

No part of any such amount referred to in this definition shall be equity unless it is exclusively used in connection with the project cost. The amount of equity shall be calculated as of the date of such investment or advance and shall be calculated in the applicable currency in which equity contribution was paid.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 Palton, Thiruvananthapuram 4

**For AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (x) **"Financial Close"** means the signing of the financing documents for project financing and the fulfilment of all conditions precedent to the initial availability of funds there under and the receipt of commitments for such equity as required by the Company in order to satisfy the requirements of the lenders, provided however that the Company has immediate access to funds (subject to giving the required draw down notices) regarded as adequate by the Company and on terms regarded as satisfactory by the Company.
- (y) **"Force Majeure"** shall have the meaning set forth in Article 13 hereof.
- (z) **"Government"** shall mean the Government of Kerala.
- (aa) **"Generating Unit"** means one set of hydro turbine generator and auxiliary equipment and facilities forming part of the project.
- (ab) **"Grid System"** means KSEBL's network of transmission and distribution through which the delivered energy is evacuated and distributed.
- (ac) **"Implementation Agreement"** shall mean the agreement dated 15.06.2009 entered into between the Government of Kerala and the Company for this Project.
- (ad) **"Infirm Energy"** means energy generated prior to the date of commercial operation of each generating unit and metered at the metering point.
- (ae) **"Installed Capacity"** shall mean the capacity of the project at the generating terminals (bus) guaranteed by the Company to KSEBL and for the project shall be such as to get a capacity of 15 MW at 0.9 power factor.
- (af) **"Interconnection Facilities"** shall mean all facilities installed by the Company to enable KSEBL's grid system to receive the delivered energy from the Project at the delivery point including the transformer and the associated equipments, relay and switching equipments, protective devices and safety equipments and transmission lines from the Project to the nearest substation.
- (ag) **"Interconnection Point"** shall mean gantry point or points in the interconnecting facility at the substation from where KSEBL system and the project are connected.
- (ah) **"Kerala State Electricity Grid code"** means the State Grid Code as approved by the Commission.
- (ai) **"State Load Despatch Centre"** shall include Load Despatch Centre of KSEBL till the constitution of State Load Despatch Centre as defined in the Electricity Act 2003.
- (aj) **"Material Adverse Effect"** means a material adverse effect on the ability of the Company to exercise any of its rights or perform/discharge any of its duties/obligations under and in accordance with the provisions of this Agreement.
- (ak) **"Maintenance Outage"** shall mean an interruption or reduction of the generating capability of the Project for the purpose of performing work on specific components

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 B-10/11, Thiruvananthapuram

For **AYYAPPA HYDROPOWER LTD**





Authorised Signatory



which work should not in the reasonable opinion of the Company be postponed until the next Scheduled Outage and shall be scheduled and allowed by KSEBL.


- (al) **"Main Meter"** shall mean ABT compatible energy meter of 0.2S class accuracy and with applicable IEC/BIS standards installed by the Company to record the delivery and receipt of electricity.
- (am) **"Meters"** shall mean Main and Check Meters.
- (an) **"Metering Point"** means the point located at the interconnection point at which the energy delivered is metered.
- (ao) **"MVAR"** means Megavars.
- (ap) **"Metering Date"** for a billing period shall mean the first working day of each calendar month.
- (aq) **"MW"** means Megawatts.
- (ar) **"MWh"** means Megawatt hour.
- (as) **"National Electricity Policy"** means policy notified by the Central Government in compliance with Section 3 of Act 2003.
- (at) **"Nominal Capacity"** with respect to a generating unit means net generating unit capacity of 5 MW, at 0.9 pf lag and with respect to the Project the net generating capacity of 13.5 MW at 0.9 pf lag at the metering point, under the project site conditions (40<sup>o</sup>C and at 80% relative humidity) and frequency variation between 47.5 Hz and 51.5 Hz, as furnished by the manufacturer/supplier in the purchase contract with the Company and after deduction of auxiliary consumption.
- (au) **"Operation and Maintenance Expenses"** means annual amount for the operation and maintenance of the Project including insurance charges.
- (av) **"Performance Tests"** shall mean the tests specified in Schedule 2.
- (aw) **"Project"** shall mean the design, financing, construction, operation and maintenance of the hydro electric power station established by the Company at Karikkayam comprising of three units with individual capacity of 5 MW and a plant capacity of 15 MW at 0.9 power factor.
- (ax) **"Project Facilities"** shall mean buildings, diversion structure, dam/weir, water conductor systems, forebay, powerhouse, switchyard, tailrace, all energy producing equipment and its auxiliary equipment, switchgear, transformer, protection equipment, access road, evacuation line up to delivery point and the like necessary to deliver the electrical energy of the powerhouse to KSEBL at the delivery point.
- (ay) **"Project Site"** shall mean the real estate, particulars whereof are set out in Schedule 8, on which the Project is to be implemented and the Project facilities are to be provided by the Company in accordance with this Agreement.

  
 CHIEF ENGINEER  
 (Corporate Planning) &  
 SAFETY COMMISSIONER  
 KSE Board, Vidyuthi Bhavanam  
 No. 1, Santhoshinagar, 4

For **ATTYAPPA HYDROPOWER LTD**  
  
 DIRECTOR/ AUTHORISED SIGNATORY

- (az) **“Prudent Utility Practices”** mean those practices, methods, techniques and standards as changed from time to time that are generally accepted internationally for use in electric utility and power generation industries (taking into account conditions in India), and used in prudent electric utility engineering and operations to design, engineer, construct, test, operate and maintain equipments lawfully, safely, efficiently and economically, as applicable to the power station of the size, service and type of the Project and that generally conform to the manufacturer's operation and maintenance guidelines.
- (aaa) **“Prudent Electrical Practices”** means the use of equipment, practices and methods, as required to comply with applicable Codes, Standards and Regulations in India to protect the KSEBL grid system, employees, agents and customers from malfunctioning by the Project and to protect the project and Company's employees and agents from malfunctioning by KSEBL grid system.
- (aab) **“Substitution Agreement”** shall mean the substitution agreement to be entered into between the Government, the lenders and the Company.
- (aac) **“Synchronisation Date”** shall mean the date on which electric energy is generated and delivered in KSEBL grid system for commissioning, testing and initial start up.
- (aad) **“System Emergency”** shall mean emergency in the grid system of KSEBL due to failure of system consequent on shortfall in capacity out of technical constraints or otherwise.
- (aac) **“Tariff”** shall mean as defined in Article 8.
- (aaf) **“Tariff Year”** shall mean the period commencing from April 1<sup>st</sup> to March 31<sup>st</sup> of the following year.
- (aag) **“Tariff Policy”** means the Tariff Policy notified by the Central Government in compliance with Section 3 of Act 2003.
- (aah) **“Technical Limits”** shall mean the limits and constraints described in Schedule 3, relating to operation and maintenance and dispatch of power from the Project.
- (aai) **“Termination”** means the early termination of this Agreement pursuant to the Termination Notice or otherwise in accordance with the provisions of this Agreement but shall not unless the context otherwise requires include the expiry of this Agreement due to efflux of time in the normal course.
- (aaj) **“Termination Date”** means the date specified in the Termination Notice as the date on which the Termination occurs
- (aak) **“Termination Notice”** means the notice of Termination by either Party to the other Party in accordance with the applicable provisions of this Agreement.
- (aal) **“Termination Payment”** means the amount payable by the Government to the Company under the Agreement upon termination.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 Pattom, Thiruvananthapuram - 4

**For AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (aam) "Tested Capacity" shall mean the capacity of the plant determined pursuant to the Performance Tests.
- (aan) "Water year" shall mean the period beginning on June 1<sup>st</sup> and ending on May 31<sup>st</sup> of the following year.

## 1.2 Interpretation

In this Agreement, unless the context otherwise requires,

- (a) any reference to a statutory provision shall include such provision as is from time to time modified or re-enacted or consolidated so far as such modification or re-enactment or consolidation applies or is capable of applying to any transactions entered into hereunder;
- (b) references to Applicable Law shall include the laws, acts, ordinances, rules, regulations, notifications, guidelines or byelaws which have the force of law in any State or Union Territory forming part of the Union of India;
- (c) the words importing singular shall include plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organisations or other entities (whether or not having a separate legal entity);
- (d) any terms which are used but not defined under this Agreement shall have the meaning ascribed thereto under the Implementation Agreement entered into between the Government of Kerala and the Company.
- (e) the headings are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;
- (f) references to "construction" include investigation, design, engineering, procurement, delivery, transportation, installation, processing, fabrication, testing, commissioning and other activities incidental to the construction;
- (g) any reference to any period of time shall mean a reference to that according to Indian Standard Time;
- (h) any reference to day shall mean a reference to a calendar day;
- (i) any reference to month shall mean a reference to a calendar month;
- (j) the Annexure and the Schedules to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
- (k) any reference at any time to any agreement, deed, instrument, concession or document of any description shall be construed as reference to that agreement, deed,

*[Signature]*  
 CHIEF ENGINEER  
 Corporate Planning &  
 SAFETY COMMISSIONER  
 KSE Board, Vidyuthi Bhavanam  
 Thiruvananthapuram - 4

For AYYAPPA HYDROPOWER LTD

*[Signature]*

DIRECTOR/ AUTHORISED SIGNATORY



instrument, concession or other document as amended, varied, supplemented, modified or suspended at the time of such reference;

- (l) references to recitals, articles, sub-articles, clauses, or schedules in this Agreement shall, except where the context otherwise requires, be deemed to be references to recitals, articles, sub-articles, clauses and schedules of or to this Agreement;
- (m) any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or the Government and/or the Independent Auditor shall be valid and effectual only if it is in writing under the hands of the Party or Secretary (Principal) of the concerned Department or Independent Auditor or their duly authorised representative as the case may be, in this behalf and not otherwise;
- (n) unless otherwise stated, any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both such days or dates.

### 1.3 Measurements and Arithmetic Conventions

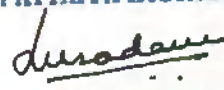
All measurements and calculations shall be in metric system and calculations done to 2 decimal places, with the third digit of 5 or above being rounded up and below 5 being rounded down.

### 1.4 Ambiguities and Discrepancies

In case of ambiguities or discrepancies within this Agreement, the following shall apply:

- (a) between two Articles of this Agreement, the provisions of specific Articles relevant to the issue under consideration shall prevail over those in other Articles;
- (b) between the written description of the drawing and the specifications and standards, the latter shall prevail;
- (c) between the dimension scaled from the drawing and its specific written dimension, the latter shall prevail;
- (d) between any value written in numerals and that in words, the latter shall prevail.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 Pattom, Thiruvananthapuram - 4

**For AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

## ARTICLE 2 TERM OF AGREEMENT AND CONDITIONS PRECEDENT

### 2.1 Term of Agreement:

This Agreement shall be valid for the entire BOOT Period under the Implementation Agreement;

Provided that in the event of Termination, the term of this Agreement shall mean and be limited to the period commencing from date of this Agreement and ending with the Termination Date.

### 2.2 Conditions Precedents

The obligations of KSEBL and the Company under this Agreement shall become effective except for infirm energy as provided in relevant articles on fulfilment of conditions specified in clauses (a) and (b) below:

#### a) Obligations of the Company:

The Company shall have:

- (i) achieved COD as per the Implementation Agreement.
- (ii) received all clearances, statutory or otherwise required to execute and operate the Project; and
- (iii) obtained approval of the Kerala State Electricity Regulatory Commission for the terms of this Agreement.

Note:


The Company shall promptly inform KSEBL the date on which the conditions precedent pursuant to Article 2.2 has been fulfilled.

#### b) Obligations of KSEBL

KSEBL shall have obtained all approvals, consents and licenses that are required to enable KSEBL to enter into this Agreement.

### 2.3 Non Fulfilment of Conditions Precedent:

Non fulfilment of the conditions precedent or refusal to waive the conditions precedent which are not fulfilled on completion of 36 months from date of Financial Close of the Project unless extended by mutual agreement are grounds for termination of the Agreement by either Party.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 Pattom, Thiruvananthapuram - 2

For **ATTAPPA HYDROPOWER LTD**




**DIRECTOR/ AUTHORISED SIGNATORY**




**ARTICLE 3**  
**RESPONSIBILITIES OF THE COMPANY AND KSEBL**

**3.1 Responsibilities of Company**

- (a) The Company shall operate the Project in a safe manner and shall comply with the statutory/regulatory measures applicable to the operation of the Project promulgated by the Government of Kerala /Government of India.
- (b) The company shall generate power at 11 kV, stepped up to 110 kV and transmitted to the Interconnection Point. The evacuation facility (from the generator switchyard and up to the Interconnection Point) shall be developed and maintained by the Company. The net power delivered at the Interconnection Point shall be to the account of KSEBL. The net power generated after deduction for auxiliary consumption will be transmitted over the line.
- (c) The Company undertakes to maintain the Interconnection Facilities up to Delivery Point in accordance with the specification and requirements as notified to the Company by KSEBL at its own cost and in accordance with Prudent Utility practices. The transmission line so constructed shall remain as dedicated transmission line.
- (d) The Company shall give KSEBL 60 days notice before CoD of each generating unit/project.
- (e) The Company shall at its own cost and expense purchase and maintain by due reinstatement or otherwise such insurance as may be necessary till the expiry of this Agreement.
- (f) The Company shall operate and maintain the Project during the term of the Agreement, in accordance with:
- (i) Implementation Agreement;
  - (ii) Prudent Utility Practices;
  - (iii) All applicable laws and directives;
  - (iv) The manuals, instructions and manufacturer's guidelines supplied by construction contractors, manufacturers of equipments/suppliers etc;
  - (v) Despatch Instructions; and
  - (vi) Guaranteed capacity.
- (g) The Company shall give four months advance notice to KSEBL intimating the readiness of each generating unit to be electrically synchronised for the first time and connected to the interconnecting station /substation bus bars.
- (h) The Company shall ensure that reactive power pumping as well as absorption as per grid conditions corresponding to a power factor of 0.9 based on the design parameters as approved in the TEFRR.

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Dattam Th...

**For ATYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (i) The Company undertakes that in case of emergency in KSEBL's evacuation system, it will back down the generation till such time normalcy is restored. KSEBL and the Company would abide by the decision of SLDC regarding scheduling of generation.
- (j) The Company shall submit the financing documents to KSEBL within 30 days of the signing thereof.
- (k) The Company shall prepare the operation and maintenance schedule of the units consistent with the Implementation Agreement and get it approved by KSEBL within 60 days before each Tariff Year.
- (l) The plant shall be equipped with necessary SCADA or equivalent arrangements and communication facilities to provide unit wise information of MW, MVAR, bus voltage, frequency and isolator status and any other relevant parameters in real time to SLDC in a format compatible to the existing SCADA system of SLDC. Any interfacing issues and protocol issues have to be sorted out by the Company at their expenditure.

### 3.2 Responsibilities of KSEBL

- (a) KSEBL will provide all possible assistance to the Company in its initiatives in obtaining all way-leaves required for construction, installation, operation and maintenance of the Project including:
  - i) Access to the project;
  - ii) Transmission facilities for the export of energy to KSEBL grid system;
  - iii) Pipelines for water;
  - iv) Other utility supplies and communication links
  - v) Supply of construction power to the Project, which shall be billed at appropriate tariff.
- (b) KSEBL shall give the Company 15 days notice regarding the readiness of the Interconnection Facility at the switching substation/grid for the full evacuation and utilisation of energy/power from the Project.
- (c) KSEBL shall off take all the electricity made available by the Company at the Delivery Point subject to system constraints and Force Majeure conditions.

### 3.3 Mutual Covenants

Each Party will duly pay all rents, taxes, cesses, fees, revenues, assessments, duties, other outgoing and other amounts owed by it and will observe all the rules and regulations pertaining to the same, and will not do or omit to do or suffer to be done anything which could reasonably be expected to adversely affect or prejudice the interest and rights of the other Party in any manner whatsoever.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vedyuthi Bldg,  
 Palatom, Thiruvananthapuram

For **ATTAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**



**ARTICLE 4**  
**COMMISSIONING AND ENTRY INTO COMMERCIAL SERVICE**

**4.1 Performance Test to establish Entry into Commercial Service**

The Company shall, at least 7 days prior to the Date of Completion, give KSEBL notice of and shall invite KSEBL's representatives or any other agency authorized by Government to attend the Performance Tests.

**4.2 Certificate of Commercial Operation**

KSEBL or authorized agency of Government shall issue Certificate of Commercial Operation of the Project to the Company on successful completion of the Performance Tests.

For the purposes of this clause each of the generating unit and/or the Project shall be deemed to enter into commercial service after the Company has demonstrated fourteen day's operation at available water head and discharge with a minimum of one day's continuous operation of such generating unit and/or the Project and during such period it achieves the Tested Capacity of at least ninety percent (90%) of the Nominal Capacity for a minimum period of twenty four (24) consecutive hours within the electrical and hydrological system characteristics, the functional specifications, as specified in Schedule 4 and Technical Specification specified in Schedule 3.

**4.3 Provisional Certificate of Commercial Operation:**

- a) If due to non-availability of water, the Performance Tests cannot be carried out by the Company, KSEBL may issue a Provisional Certificate of Commercial Operation of the Project to the Company after carrying out the tests that are possible to be conducted with the available water.
- b) The Provisional COD shall be valid for a period of 12 months from the date of issue or upto the date on which the Performance Tests are conducted, whichever is earlier. KSEBL shall purchase the energy generated from the project as set forth in sub article 8.2, if it achieves CoD. Otherwise the tariff as in sub article 8.3 till the final Performance Tests are conducted. The bank guarantee submitted as required in clause 4.1 of the Implementation Agreement shall be released when final Performance Tests are conducted and results accepted.
- c) In the event of the Performance Tests demonstrating that the company has not satisfied the parameters set out in sub article 4.2, then the provisional certificate shall stand cancelled. In such an event the power generated by the Company shall be deemed to be infirm power and the tariff shall be the tariff applicable for infirm power, as set forth in sub article 8.3. The additional payment made by KSEBL shall be adjusted against bank guarantee submitted by the Company as per clause (b).

**4.4 Shortfall in Nominal Capacity**

If the Tested Capacity is less than the Nominal Capacity, the Company shall endeavour to bring the capacity to Nominal Capacity within a period of sixty days. If the Company fails

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board Building, Bangalore

**ATTAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORIZED SIGNATORY**

to do so, the Tested Capacity after the period of sixty days shall be treated as Guaranteed Capacity. The Tariff shall thereafter be reduced on pro rata basis for the short fall in capacity below 100%.

#### 4.5 Excess of Nominal Capacity

If the Tested Capacity is more than the Nominal Capacity, KSEBL shall accept the Tested Capacity as the Plant capacity and the Tested Capacity shall be deemed to be Nominal Capacity for all purposes of this Agreement.

  
CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

For AYYAPPA HYDROPOWER LTD



DIRECTOR/ AUTHORISED SIGNATORY



**ARTICLE 5**  
**SALE AND PURCHASE OF ENERGY**

**5.1** From and after the COD of the Project/generating unit, the Company agrees to sell and KSEBL agrees to purchase the entire energy made available by the Company at the Interconnection Point as per the Tariff given in the Article 8 during the term of this agreement or till the termination date in the event of termination.

**5.2 Tariff for Infirm Energy:**

The Infirm Energy shall be metered at the Interconnection Point as per provisions under Article 3.1(b) and Article 6 and delivered at the Interconnection Point/grid. KSEBL shall pay for the metered Infirm Energy at the tariff as mentioned in Article 8.3.

**5.3 Carbon credit**

The benefits accruing on account of carbon credit for the project shall be shared between KSEBL and the Company as per latest CERC guidelines/norms.

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

**For AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**

## ARTICLE 6 METERING


- 6.1 The Company shall install meters at the metering point in accordance with relevant standards. With the introduction of intra-state ABT, corresponding modification shall be made in the metering and billing procedure.
- 6.2 ABT compatible energy meters shall be capable of measuring and recording the following parameters for various time/frequency blocks as per Prudent Utility Practices.
- a) Active Energy (kWh) and Reactive Energy (kVARh)
  - b) Instantaneous voltage, current, power factor
  - c) Frequency
  - d) Maximum demand in kVA/kW for each demand period and for the total period since the last reset.
  - e) kWh/kVARh since last reading
  - f) Real time and time of day metering; and
  - g) Number of resets
  - h) The active energy (kWh) during each successive 15 minutes block
  - i) Net cumulative active energy
  - j) Average frequency during each successive 15 minutes block
  - k) Reactive VAR
  - l) Reactive VARh shall be integrated in 2 registers –  
Av.RMS Voltage > 103%  
Av.RMS Voltage < 97%
- 6.3 The Parties shall undertake a joint reading of the Meters on the date of synchronisation, on COD, and subsequently on the first working day of every month at pre-appointed time as settled between the Parties and at periodicity as required under the ABT regime.
- 6.4 All meters shall be jointly inspected, calibrated and sealed by authorised representatives on behalf of KSEBL as well as the Company and shall not be interfered with except in the presence of the authorised representatives of both the Parties.
- 6.5 The meters shall be tested for accuracy bi-annually and shall be treated as working satisfactorily so long as the errors are within the limits prescribed for meters of the relevant class. Readings of the Main Meters recorded jointly by the Parties will form the basis for billing, so long as the results of the half-yearly checks thereof are within the prescribed limits.
- 6.6 If during the half-yearly test check or annual calibration as per Clause 6.5 above, the Main Meter is found to have errors beyond permissible limits but the Check Meter is working normally, consumption shall be revised based on the consumption recorded by the Check Meter. The Main Meter shall be recalibrated immediately and billing thereafter shall be as per Main Meter.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
 SAFETY COMMISSIONER  
 KSE Board, Vidyuthi B

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**

- 6.7 If during the half yearly or annual calibration, both the Meters are found to have errors beyond permissible limits, the bill shall be revised from the date of previous calibration by applying correction equivalent to the percentage of error beyond the permissible limit on the consumption registered by the Main Meter.
- 6.8 All the tests on the meters shall be conducted by the representatives of both the Parties and the results and corrections so arrived at mutually will be recorded in writing and will be applicable and binding on both the Parties.
- 6.9 The calibration and the maintenance of the Meters shall be done by KSEBL at the cost of the Company.
- 6.10 If tampering of metering cubicle or energy meters installed at the Project is detected, KSEBL has the option to withdraw from the PPA and also take the action under applicable laws and KSEBL's supply regulations.

  
CHIEF ENGINEER  
(Corporate Planning &  
SAFETY COMMISSIONER  
KSE Board, Vayyuthi Bhavanam  
Palloori, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATURE**



**ARTICLE 7  
PLANT OPERATION AND MAINTENANCE**

**7.1 Operating Procedures**

7.1.1 Not later than one hundred and twenty (120) days before the Scheduled Synchronization Date of the Project, KSEBL shall provide the Company with a draft Operating Procedure dealing with all operation interfaces between KSEBL and the Company including, but not limited to,

- a) the method of day-to-day communication between KSEBL and the Company;
- b) safety co-ordination;
- c) clearances and switching practices;
- d) scheduling and despatch;
- e) capacity and energy reporting;
- f) operating log;
- g) incident reporting;
- h) testing of the Interconnection and Transmission Facilities;
- i) testing (including Performance Tests) and monitoring of the Units;
- j) Reactive Power support;

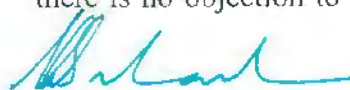
7.1.2 The Operating Procedures shall be consistent with the following, it being clearly understood that in the event of inconsistency between two or more of the following, the order of priority as between them shall be the order in which they are placed, with 'applicable law' being the first:

- (a) Applicable law;
- (b) the Grid Code;
- (c) the terms and conditions of this Agreement;
- (d) the Functional Specifications;
- (e) the Technical Specifications; and
- (f) Prudent Utility Practices.

7.1.3 Within sixty (60) days after receiving the draft submitted by KSEBL pertaining to the Operating Procedures, the Company shall notify KSEBL in writing of its objections, if any, to the drafts received and the deletions, amendments or additions that it requires, and both Parties shall meet to discuss the draft Operating Procedures and to try to reach agreement on the Operating Procedures and suggested deletions, amendments and additions. If the Parties have failed to reach agreement within twenty (20) days after KSEBL's receipt of the Company's notice pursuant to this Article, the matter shall be resolved in accordance with Article 15.

7.1.4 Any Party may from time to time propose amendments to the Operating Procedures in any manner consistent with Article 7.1.2 by giving written notice to the other Party stating the reasons for the proposed amendment. The process in Article 7.1.3 shall apply if one Party objects within sixty (60) days to any proposed amendment.

7.1.5 The Operating Procedures shall take effect on the date agreed by the Parties or, if there is no objection to the proposed Operating Procedures, the expiry of the sixty

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board

For **AYYAPPA HYDROPOWER LTD**

  
 DIRECTOR/ AUTHORISED SIGNAT

(60) day objection period or such later date as shall be set out in the draft Operating Procedures which have been circulated:

7.1.6 The Parties shall comply with the Operating Procedures.

## 7.2 Operation and Maintenance of the Power Station

7.2.1 The Company shall be responsible at its own expense for ensuring that the Power Station is operated and maintained in accordance with all legal requirements, including the terms of all Consents and Prudent Utility Practices so as to meet its obligations under this Agreement, including without limitation its obligations under Article 3.1, and so as not to have an adverse effect on the Grid System.

7.2.2 The Company shall be responsible at its own expense for obtaining and keeping in force all Consents required for the operation of a Unit, the Power Station and the Project in accordance with this Agreement throughout its Operating Period.

7.2.3 The Company shall ensure that sufficiently competent and qualified personnel are always on hand at the Power Station to enable a Unit to be operated twenty four (24) hours a day, seven (7) days a week throughout the year, it being understood that this shall not create an obligation on KSEBL to absorb all the Electrical Output that is capable of being generated if the Units are run in such manner and shall also not affect the ability of KSEBL to Dispatch the Power Plant. In relation to employing personnel the Company shall meet any applicable laws, rules, regulations and requirements in force from time to time in India.

## 7.3 Inspections

7.3.1 KSEBL shall have the right to designate, from time to time in a written notice to the Company, up to five (5) of their representatives including Independent Engineer, who shall be responsible for inspecting the Power Station for the purpose of verifying the Company's compliance with this Article 7 and who shall have access to the Power Station, in the case of KSEBL:

- a) on no more than two (2) occasions in a Tariff Year, upon giving not less than twenty four (24) hours notice of the inspection to the Company;
- b) on occasions when the Company has reported partial or full outage, to verify the other conditions reported by the Company which in the reasonable opinion of KSEBL may affect the output of a Unit and / or the Power Station in the next twenty four (24) hours, by giving one (1) hour notice; and
- c) at any other time for good cause, upon giving such notice as maybe reasonable in the circumstances; subject, in all cases, to their complying with all reasonable safety precautions and standards.
- d) designated officials of STU and SLDC shall be inspecting the plant without prior permission.

7.3.2 In the exercise of any of its right under Article 7.3.1, KSEBL shall ensure that their representatives do not knowingly interfere with the proper operation or maintenance of the Power Station.

*[Signature]*  
 CHIEF ENGINEER  
 (Corporate Planning) &  
 SAFETY COMMISSIONER  
 KSE Board, Vidyuthi Bhavanam  
 Bangalore - 560025

For AYYAPPA HYDROPOWER LTD

*[Signature]*

DIRECTOR/ AUTHORISED SIGNATORY



#### 7.4 Dispatch Procedures

- 7.4.1 The Parties shall comply with the Dispatch Procedures, which should be mutually agreed among parties not later than 60 days before the Scheduled Commercial Operation Date of the first unit. The Dispatch Procedures to be agreed to shall at all times be consistent with the Applicable Laws including Grid Code
- 7.4.2 The Company may at any time and KSEBL may, in respect of the Dispatch Procedures in so far as relevant to them, at any time, after the Commercial Operations Date propose revisions to the Dispatch Procedures by giving the written notice of the proposed changes and the reasons for the proposed changes.
- 7.4.3 Within thirty (30) days of receiving any proposed change to the Dispatch Procedures pursuant to Article 7.4.2, the Party receiving the notice shall have thirty (30) days within which to notify the Party suggesting such changes whether or not it agrees to the proposed changes in which event:
- a) if the change is agreed, the revised Dispatch Procedures shall become the Dispatch Procedures between KSEBL and Company for the purposes of this Agreement upon the date specified in the proposal or, if no date is so specified upon the expiry of the thirty (30) day notice period;
  - b) if the change is not agreed, the Party receiving the notice shall provide a written list of its objections to such revised Dispatch Procedures and Article 7.4.4 shall apply; and
  - c) if the Party receiving the notice fails to respond within such thirty (30) day period it will be deemed to have agreed to the proposed change.
- 7.4.4 If a Party objects to any revised Dispatch Procedures proposed under Article 7.4.2, both the receiving Party and the issuing Party shall consider the objections in good faith with a view to reaching agreement on how to revise the Dispatch Procedures.
- 7.4.5 If KSEBL and the Company reach agreement on the revised Dispatch Procedures within twenty (20) days after the list of objections was provided pursuant to Article 7.4.3, they shall become the Dispatch Procedures for the purposes of this Agreement with effect from the date specified in the agreement. If they fail to reach agreement within that period the matter shall be resolved in accordance with Article 15.
- 7.4.6 Notwithstanding the foregoing provisions of this Article 7.4, no change shall be made to the Dispatch Procedures if the revised Dispatch Procedures would be inconsistent or incompatible with the following, it being clearly understood that in the event of inconsistency between two or more of the following, the order of priority as between them shall be the order in which they are placed, with 'applicable law' being the first:
- a) Applicable law;
  - b) the Grid Code;
  - c) the terms and conditions of this Agreement;
  - d) the Functional Specifications;
  - e) the Technical Specifications; and
  - f) Prudent Utility Practices.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
 SAFETY COMMISSIONER

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**



## 7.5 Scheduled Outages

7.5.1 Not later than April 1st in each year (or by such other date as KSEBL may jointly from time to time prescribe for the submission of outage plans from generating companies connected to the Grid System), the Company shall submit to KSEBL in writing its firm proposals for the Scheduled Outages to be taken in the next tariff year and its provisional proposals for Scheduled Outages in each of the next two (2) succeeding tariff years.

7.5.2 Unless otherwise requested to do so by KSEBL, the Company shall always plan to take Scheduled Outages only during any three months acceptable to KSEBL.

Further, without the prior consent of KSEBL, the Company shall not take Scheduled Outages for all the Units of the Power Station, at the same time:

Provided that, after giving a notice of not less than two (2) years, KSEBL shall have the right to jointly replace the above months with any three other months.

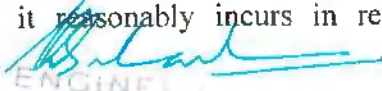
7.5.3 Within two (2) months after receiving the Company's proposals, KSEBL shall notify the Company in writing whether its proposed Scheduled Outages for the forthcoming one (1) tariff year are acceptable and, if not, and after discussing the matter with the Company, they shall indicate the periods that would be acceptable, which shall be:


- (a) of the same duration as the periods requested by the Company;
- (b) within the time limits required by any legal requirement relating to routine maintenance;
- (c) within the time limits required or recommended by the manufacturer or supplier of the plant which is to undergo maintenance; and
- (d) at the same point in time.

7.5.4 The Company may only object to a Scheduled Outage proposed by KSEBL on the grounds that it would be inconsistent with the requirements of Article 7.5.3. Unless the Company objects in writing within twenty (20) days after receiving the proposal, it shall be deemed to have agreed to the Scheduled Outages proposed jointly by KSEBL. If the Company does object to a proposed Scheduled Outage within that period and the Parties cannot reach agreement within ten (10) days after the Company's objection was sent to KSEBL, the matter shall be resolved in accordance with Article 15.

7.5.5 The Scheduled Outages accepted by KSEBL or agreed to by the Company pursuant to Article 7.5.4 shall be confirmed to the extent that they relate to the next tariff year and shall be provisional to the extent that they relate to subsequent tariff years. Provisionally confirmed Scheduled Outages, may be changed, by any Party for good cause.

7.5.6 In an Emergency, KSEBL may require the Company to use its best efforts to reschedule a confirmed Scheduled Outage (including one which has already begun) to a more convenient time and shall compensate the Company for all additional costs which it reasonably incurs in rescheduling the Scheduled Outage. The

  
 CHIEF ENGINEER  
 (Corporate Planning & Safety)  
 SAFETY COMMISSIONER  
 HSE Deptt., Vyttila, Ernakulam  
 Palam, Thiruvananthapuram - 4

For AYYAPPA HYDROPOWER LTD  
  
 DIRECTOR/ AUTHORISED SIGNATORY

Company on request by KSEBL shall reschedule the maintenance on exigency conditions. Company shall obtain the concurrence of SLDC before availing the shutdown for maintenance. The outage details shall be intimated to SLDC daily.


- 7.5.7 KSEBL shall also jointly give notice to the Company of their maintenance program for the Interconnection and Transmission Facilities and shall use their reasonable endeavours to coordinate such maintenance with the Scheduled Outages approved pursuant to this Article 7.5 so as to minimise any disruption to the operation of the Project.
- 7.5.8 The Company shall not declare any Unit available in any Settlement Period when it was scheduled to be undergoing a Scheduled Outage except to the extent that the availability of the Interconnection and Transmission Facilities is sufficient to allow KSEBL to utilise the full amount of the Power Station's Declared Capacity and KSEBL, in their sole discretion, choose to accept the Electrical Output made available during such Settlement Period.


## 7.6 Maintenance Outages

- 7.6.1 Whenever the Company needs a Maintenance Outage it shall advise KSEBL in accordance with the Operating Procedures of the nature of the work to be carried out, the estimated time required to complete it and the latest time by which in the Company's opinion the work should begin consistent with Prudent Utility Practices (which shall be not earlier than forty eight (48) hours after the time when the Company advised KSEBL of the need for the Maintenance Outage).
- 7.6.2 After discussing the matter with the Company, KSEBL shall jointly advise the Company regarding when the requested Maintenance Outage is scheduled to begin (which shall be not later than the latest time indicated by the Company). The Company shall use its reasonable endeavours consistent with Prudent Utilities Practices to take the relevant Unit out of service at the scheduled time.
- 7.6.3 KSEBL may jointly require the Company to schedule a Maintenance Outage in accordance with Articles 7.6.1 and 7.6.2 to remedy any impairment of a Unit's ability to meet its Contracted Operating Characteristics.

## 7.7 Coordinating Committee

- 7.7.1 No later than one hundred and twenty days (120) days prior to the Scheduled Synchronisation Date of the First Unit, the Parties shall establish a committee (the "Co-ordinating Committee") which shall be responsible for the co-ordination of the commissioning and operation of the Interconnection and Transmission Facilities and the Power Station and their coordination with the Grid System. The Co-ordinating Committee shall comprise four (4) members of which two (2) shall be appointed by the Company (one or more of which shall be employees of the Operator), two (2) of which shall be appointed by KSEBL.
- 7.7.2 Without limitation to the generality of Article 7.7.1, the powers and duties of the representatives of the Co-ordinating Committee shall include:

  
 CHIEF ENGINEER  
 KSEBL  
 SADDI, CHENNAI  
 10/11/2010

For AYYAPPA HYDROPOWER LTD  
  
 DIRECTOR/ AUTHORISED SIGNATORY



- a) the co-ordination of the respective programmes of the Parties for the construction and commissioning of the Interconnection and Transmission Facilities and each of the Units and agreement where necessary upon the respective commissioning procedures;
- b) discussion of the steps to be taken on the occurrence of a Force Majeure Event, or a shutdown or reduction in capacity for any other reason, either of the Interconnection and Transmission Facilities or the Power Station;
- c) the co-ordination of the maintenance programme of the Interconnection and Transmission Facilities and the Units and / or the Power Station whether scheduled or otherwise;
- d) the co-ordination of forecasts or requirements from the Power Station;
- e) consultation on the insurance programme to be undertaken by the Company for the purposes of this Agreement including in respect of the Insurances;
- f) the development of any revisions to the Dispatch Procedures;
- g) the development of the Operating Procedures;
- h) safety matters affecting the Parties or their contractors;
- i) clarification of plans for an Emergency developed by KSEBL including for recovery from a local or widespread electrical blackout or voltage reduction in order to effect load curtailment;
- j) the review and revision of protection schemes and devices; and
- k) any other mutually agreed matters affecting the operation of the Interconnection and Transmission Facilities or the Power Station.

7.7.3 The Co-ordinating Committee may agree upon procedures for the holding of meetings, the recording of meetings and the appointment of subcommittees:

7.7.4 Provided that KSEBL shall nominate the chairman of the co-ordinating committee.

All decisions at any meeting of the Co-ordinating Committee shall be made with the unanimous agreement of all persons present at such meeting:


7.7.5 Any matters not resolved by such unanimous agreement or resolution shall be determined in accordance with Article 15.

7.7.6 The Co-ordinating Committee shall have the option, by mutual agreement between the members of the Co-ordinating Committee, to co-opt any other member(s) from relevant bodies such as Lenders (or any agent, trustee or representative acting on their behalf).

7.7.7 Except to the extent that any decision is inconsistent with the following, it being clearly understood that in the event of inconsistency between two or more of the following, the order of priority as between them shall be the order in which they are placed, with 'applicable law' being the first:

- (a) applicable law;
- (b) the Grid Code;

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
 SAFETY COMMISSIONER  
 KSE Board, 1st Bhavanam  
 Pattom, Thiruvananthapuram.

For **AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**



- (c) the terms and conditions of this Agreement;
- (d) the Functional Specifications;
- (e) the Technical Specifications; and
- (f) Prudent Utility Practices.

The Parties shall comply with the unanimous decisions of the Co-ordinating Committee in relation to matters within its competence or those that may be referred to it.

## 7.8 Maintenance of Records

7.8.1 Each Party shall keep complete and accurate records and all data required by each of them for the purposes of proper administration of this Agreement including, without limitation, an accurate and up to date operating log at the Power Station with records of:


- (a) meter records and other records needed to reflect real and reactive power production for each Settlement Period and Electrical Output of the Power Station on a continuous real time basis;
- (b) records of Available Capacity and Declared Capacity;
- (c) the results of any tests;
- (d) changes in operating status, Scheduled Outages, Maintenance Outages and Forced Outages (and any other restrictions or limitations affecting Available Capacity);
- (e) any unusual conditions found during inspections; and
- (f) records of primary and secondary fuel receipts, consumption and stocks.

7.8.2 All records maintained pursuant to this Article 7.8.1 shall be maintained for minimum of sixty (60) months after the creation of such records or data:


Provided that, the Parties shall not dispose of or destroy any such records after such sixty (60) month period without thirty (30) days' prior written notice to the other parties or at any time during the continuation of any dispute in respect of any matter to which such records relate.

7.8.3 Every Party shall have the right, upon reasonable prior notice, to examine the records and data of the other Parties relating to this Agreement or the operation and maintenance of the Power Station at any time during normal office hours.

7.8.4 The company shall submit all the data requested by KSEBL for a given period pertaining to the Generating station. The company shall forward the half hourly energy, MW and MVarh reading to SLDC every day at 00.30 Hrs for the preparation of daily statistics.

  
 CHIEF ENGINEER  
 (Corporate Planning)  
 SAFETY COMMISSIONER  
 KSE Board, Vidyut Nigam  
 Coimbatore, Thrissur

For AYYAPPA HYDROPOWER LTD

  
 DIRECTOR/ AUTHORISED SIGNATORY


**ARTICLE 8  
TARIFF**

- 8.1 Tariff period shall be reckoned from COD of the first generating unit and thereafter shall be continued till the end of BOOT period.
- 8.2 Single Part Tariff: The tariff shall be as decided by KSERC and as mentioned in Schedule 9.


AND vide B.O (FTD) No. 1764/2014(KSEB/TRAC/KSERC/Karikkayam/2014-15) dated 26.6.2014, KSEBL had accorded sanction to make provisional payment at the generic tariff of Rs. 4.16/unit as approved by KSERC for small hydro projects above 5MW, for the energy supplied from Karikkayam SHP to KSEBL, till a final decision on OP27/2013 filed by KSEBL before KSERC is ordered, subject to the provision of an Undertaking by AHPL, and as the Company has given an Undertaking to the effect that it has the full understanding that the provisional payments at the tariff of Rs.4.16/unit are only interim arrangements between the M/s.AHPL and KSEBL till final decision of KSERC in OP27/2013 filed by KSEBL before KSERC. Further that excess/short payment made if any as per the final decision shall be adjusted in the future monthly bills of M/s.AHPL taking into consideration the final tariff determined by the Commission.

- 8.3 In respect of the sale of infirm energy if any to KSEBL, KSEBL shall pay a tariff as decided by KSERC.
- 8.4 The tariff pursuant to sub article 8.2 shall be for the total annual generation from the plant as long as the Tested Capacity of the plant is above the specified rating of KSEBL.
- 8.5 **Purchase of Reactive Energy by KSEBL**

KSEBL shall purchase reactive power supplied to the Grid System by the Company during "no load conditions" at 50% of ABT ruling rate or at a rate per kVArh with COD as base data and an annual escalation of 5%, whichever is lower as approved by KSERC.

  
CHIEF ENGINEER  
KARIKKAYAM SHP  
KSEBL

For AYYAPPA HYDROPOWER LTD

  
DIRECTOR/ AUTHORISED SIGNATORY

**ARTICLE 9  
BILLING AND PAYMENTS**

**9.1 Monthly Bills**

The Company shall furnish a bill to KSEBL on Billing Date in such a form as may be mutually agreed by KSEBL and the Company for the billing month. Each bill for a billing month shall be payable by KSEBL on the Due Date of Payment. If the Due Date is a holiday next working day both for the Bank and KSEBL shall be the Due Date. Payment on or before the Due Date as stated above can be accepted for availing rebate.

**9.2 Billing**

The monthly bill will be assumed as undisputed unless KSEBL informs the Company within 5 days of receipt that the bill is disputed with the reasons thereof. In any event KSEBL shall pay the bill on the due date of payment and in the event of resolution of dispute the same shall be resolved in accordance with sub article 9.5.

**9.3 Billing of Infirm Energy**

The Company shall submit to KSEBL a separate bill for infirm energy metered at the interconnecting point at Company's switchyard within 15 (fifteen) days from COD of each generating unit. The tariff for infirm energy shall be as per sub article 8.3 of this Agreement.

**9.4 Billing for Energy Purchased by the Company**

Energy consumed by the Company from KSEBL for consumption or during maintenance / shutdown period of the power plant shall be billed by KSEBL on monthly basis as per the tariff levied by KSEBL to the HT / EHT consumers or net export billing by the Company to KSEBL.

**9.5 Supplementary Bill**

The adjustments, if any, on account of any additional claims or errors in the billing for a month shall be made through supplementary bills and shall also be paid / adjusted with the next month's bill.

**9.6 Payment**

KSEBL shall make payments of the amounts due in Indian Rupees on or before Due Date of Payment.

**9.7 Late Payments:**

The monthly bill shall be paid by KSEBL on or before the due date of payment. If the amount is not paid within 60 days from the date of billing, then KSEBL shall pay penalty @ 1.25% per month for late payment as per CERC guidelines.

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, V. S. Bhavanam  
Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**




## 9.8 Rebates for Prompt Payment

If KSEBL pays the amount on or before the due date then a rebate of 2% shall be given to KSEBL by the Company.

### 9.9.1 Retention Money

- i) KSEBL shall withhold a sum equal to 25% of each payment made to the Company during two years immediately preceding the expiry of this Agreement (hereinafter referred to as the "Retention Amount").
- ii) The Retention Amount shall be held in trust by KSEBL for the Government and shall be returned by KSEBL upon certification by the Government that the Company has complied with the transfer requirements in Article 9 of the Implementation Agreement or appropriated to the extent required towards the costs reimbursable by the Company in terms of Article 9 of the Implementation Agreement.

  
CHIEF ENGINEER  
(Corporate Planning) 5  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Palom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**



**DIRECTOR/ AUTHORISED SIGNATORY**

## ARTICLE 10 INSURANCE

### 10.1 Insurance:

The Company shall at its cost and expense, purchase and maintain by re-instatement or otherwise, during the operations period, insurance against:

- (i) loss, damage or destruction of the Project Facilities, at replacement value;
- (ii) the Company's general liability arising out of the License;
- (iii) liability to third parties;
- (iv) Fire protection coverage insurance; and
- (v) any other insurance that may be necessary to protect the Company, its employees and its assets against loss, damage, destruction, business interruption or loss of profit including insurance against all Force Majeure Events that are insurable.

### 10.2 Evidence of Insurance

The Company shall provide annually to the Government/KSEBL copies of all insurance policies (or appropriate endorsements, certifications or other satisfactory evidence of insurance) obtained by the Company in accordance with this Agreement and as per the Implementation Agreement signed by the Company and the Government.

### 10.3 Validity of Insurance


The Company shall from time to time promptly pay insurance premium, keep the insurance policies in force and valid throughout the agreement period and furnish copies thereof to the Government/KSEBL. The insurance policy shall not be cancelled or terminated unless 10 days' clear notice of cancellation is provided to KSEBL in writing.

Provided that if at any time the Company fails to obtain or maintain in full force and effect any or all of the insurance required under this Agreement, the Government/KSEBL may at its option (but not being obliged to do so) obtain and maintain such insurance and all sums incurred by the Government/KSEBL there for shall be reimbursed by the Company to the Government/KSEBL together with interest thereon at 5% per annum over SBI PLR from the date the respective sums were incurred by the Government/KSEBL, within 7 days from the receipt of claim in respect thereof made by KSEBL.

### 10.4 Application of Insurance Proceeds

Subject to the provisions of the Financing Documents and unless otherwise provided herein, the proceeds of all insurance policies received shall be promptly applied by the Company towards repair, renovation, restoration or re-instatement of the Project Facilities or any part thereof which may have been damaged or destroyed. The Company may designate the lenders as the loss payees under the insurance policies or assign the insurance policies in their favour as security for the

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vv  
Pattom, Thiruvananthapuram

**For AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

financial assistance provided by them to the Project. The Company shall carry out such repair, renovation, restoration or re-instatement to the extent possible in such manner that the Project Facilities after such repair, renovation, restoration or re-instatement be as far as possible in the same condition as it were prior to such damage or destruction, except for normal wear and tear.

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**



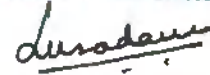
**DIRECTOR/ AUTHORISED S**



**ARTICLE 11  
PROTECTION SYSTEM**

- 11.1 The Company shall be responsible for designing protection system of the entire equipment for safe operation of the Project/Project Facilities as per the Prudent Utility Practices.
- 11.2 The Company shall ensure that the protective relays for the Project Facilities shall be suitably graded and co-ordinated with KSEBL's relays as may be required by KSEBL.
- 11.3 The company shall design, construct, test, control, operate and maintain the Project in accordance with
- Prudent Utility Practices; and
  - Prudent Electrical Practices.

For AYYAPPA HYDROPOWER LTD



DIRECTOR/ AUTHORISED SIGNATORY



CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

**ARTICLE 12  
REPRESENTATION AND WARRANTIES**

**12.1 Representation and Warranties of the Company**


The Company represents and warrants to KSEBL that:

- (a) the Company is duly organised and validly existing under laws of India and has all requisite legal power and authority to execute this Agreement and carry out the terms, conditions and provisions hereof;
- (b) this Agreement constitutes valid, legal and binding obligation of the Company, enforceable in accordance with the terms hereof, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, moratorium or other similar laws affecting creditor's rights generally to the extent that the remedies of specific performance, injunctive relief and other forms of equitable relief are subject to equitable defences; the discretion of the court before which any proceeding thereof may be brought and the principles of equity in general;
- (c) there are no actions, suits or proceedings pending or to the Company's knowledge threatened, against or affecting the Company before any court or administrative body or arbitral tribunal that might materially or adversely affect the ability of the Company to meet and carry out its obligations under this Agreement; and
- (d) the execution and delivery by the Company of this Agreement has been duly authorised by all requisite corporate or partnership action, and will not contravene any provision of, or constitute a 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 of KSEBL**

KSEBL represents and warrants to the Company that:


- (a) KSEBL is a statutory body duly constituted under the Companies Act, 1956 as amended, and validly existing under the laws of India and has all requisite legal power and authority to execute this Agreement and carry out the terms, conditions and provisions hereof;
- (b) this Agreement constitutes the valid legal and binding obligation of KSEBL, enforceable in accordance with the terms hereof except as the enforceability may be limited by applicable bankruptcy, insolvency, reorganisation, moratorium or other similar laws affecting creditor's rights generally to the extent that the remedies of specific performance, injunctive relief and other forms of equitable relief are subject to equitable defences, discretion of the court before which any proceeding thereof may be brought and the principles of equity in general;

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
 SAFETY COM  
 KSE Board V  
 Palatom, Thiruvananthapuram

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (c) There are no actions, suits or proceedings pending or to KSEBL's knowledge threatened, against or affecting KSEBL before any court or administrative body or arbitral tribunal that might materially or adversely affect the ability of KSEBL to meet and carry out its obligations under this Agreement; and
- (d) the execution and delivery by KSEBL of this Agreement has been duly authorised by all requisite corporate action and will not contravene any provision of, or constitute a default under any other agreement or instrument to which it is a party or by which it or its property may be bound.

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Palton, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**



**DIRECTOR/ AUTHORISED SIGNAT.**



## ARTICLE 13 FORCE MAJEURE

### 13.1 Force Majeure Events

As used in this Agreement, Force Majeure Event means any of the Non-Political Events or the Political Events as set out in sub-articles 13.2 and 13.3 respectively including the impact/consequence thereof which:

- (a) is beyond the control of the Party claiming to be affected thereby (the "Affected Party"),
- (b) causes a Material Adverse Effect and prevents the Affected Party from performing or discharging its obligations under this Agreement; and
- (c) the Affected Party has been unable to overcome or prevent despite exercise of due care and diligence.

### 13.2 Non-Political Events

Any of the following events which prevents the Affected Party from performing any of its obligations for a continuous period of not less than 7 days from the date of its occurrence, shall constitute a Non-Political Event:

- a) earthquake, flood, inundation, landslide;
- b) storm, tempest, hurricane, cyclone, lightning, thunder or other extreme atmospheric disturbances;
- c) fire caused by reasons not attributable to the Company or the contractor or any of the employees or agents of the Company or the contractor;
- d) acts of terrorism;
- e) strikes, boycotts, labour disruptions or any other industrial disturbances not arising on account of the acts or omissions of the Company or the contractor;
- f) war, hostilities (whether war be declared or not);
- g) invasion, act of foreign enemy, rebellion, riots, weapon conflict or military actions, civil war;
- h) ionising radiation, contamination by radioactivity from nuclear fuel, any nuclear waste, radioactive toxic explosion;
- i) volcanic eruptions;
- j) any other events of like nature; and
- k) any failure or delay of a contractor caused by any of the aforementioned Non-Political Events, for which no offsetting compensation is payable to the Company by or on behalf of the contractor.

*[Signature]*  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY CO-ORDINATOR**  
 KSE Board  
 Pattom, Thiruvananthapuram

For **AIYAPPA HYDROPOWER LTD**

*[Signature]*

**DIRECTOR/ AUTHORISED SIGNATORY**

### 13.3 Political Events

Following events shall constitute Political Events:

- (a) Change in Law
- (b) any failure or delay of a contractor caused by any of the aforementioned political event, no offsetting compensation is payable to the Company by or on behalf of the contractor.

### 13.4 Obligations of the Parties

#### (a) Obligation to Intimate

- (i) As soon as practicable and in any case within 7 days of the date of occurrence of a Force Majeure Event or the date of knowledge thereof, the Affected Party shall intimate the other Party of the Force Majeure Event setting out, inter alia, the following in reasonable detail:
  - (i.a) the nature and extent of the Force Majeure Event and classification of the same as political/non political;
  - (i.b) the estimated Force Majeure Period;
  - (i.c) the nature of and the extent to which, performance of any of its obligations under this Agreement is affected by the Force Majeure Event;
  - (i.d) the measures which the Affected Party has taken or proposes to take to alleviate / mitigate the impact of the Force Majeure Event and to resume performance of such of its obligations affected thereby; and
  - (i.e) any other relevant information concerning the Force Majeure Event, and/or the rights and obligations of the Parties under this Agreement.
- (ii) As soon as practicable and in any case within 5 days of intimation by the Affected Party in accordance with the preceding clause (i), the Parties shall meet, hold discussions in good faith and where necessary conduct physical inspection/ survey of the Project / Project Facilities in order to:
  - (ii.a) finalise the classification of Force Majeure event mentioned in item (i.a) of clause (i) above;
  - (ii.b) assess the impact of the underlying Force Majeure Event;
  - (ii.c) to determine the likely duration of Force Majeure Period; and
  - (ii.d) to formulate damage mitigation measures and steps to be undertaken by the Parties for resumption of obligations, the performance of which shall have been affected by the underlying Force Majeure Event.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, P. V. Narayana Murthy Bhavanam  
 Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (iii) The Affected Party shall, during the Force Majeure Period, provide the other Party with regular (not less than weekly) reports concerning the matters set out in the preceding clause (ii) as also any information, details or document, which the other Party may reasonably require.

**(b) Performance of Obligations**

If the Affected Party is rendered wholly or partially unable to perform any of its obligations under this Agreement because of a Force Majeure Event (Political/Non Political), it shall be excused from performance of such obligations to the extent to which it is unable to perform the same on account of such Force Majeure Event provided that:

- (i) the excuse from performance shall be of no greater scope and of no longer duration than is necessitated by the Force Majeure Event;
- (ii) the Affected Party shall make all reasonable efforts to mitigate or limit damage, if any, caused or is likely to be caused to the Project Facilities as a result of the Force Majeure Event and to restore the Project Facilities, in accordance with the Good Industry Practice and its relative obligations under this Agreement;
- (iii) the Affected Party shall take all remedial measures including duly prosecuting and exhausting all such remedies available to the Affected Party under the applicable laws;
- (iv) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party written notice to that effect and shall promptly resume performance of its obligations hereunder:


The Affected Party shall continue to perform such of its obligations which are not affected by the Force Majeure Event and which are capable of being performed in accordance with this Agreement.


**(c) Compensation**

In the event of any loss sustained which is quantified by the Company and accepted by Government due to a Political Force Majeure as aforesaid for a period which may extend from 120 days to 365 days at a stretch during a current year /two consecutive years, Article 6.4 (c) of Implementation Agreement shall apply.

**13.5** If a Force Majeure event which is a non political event continues or is in the reasonable judgement of the Parties likely to continue beyond a period of 120 days or a political force majeure event subsist for a period exceeding 365 days, the following shall apply:

- (a) If KSEBL is the aggrieved party, it shall approach the Government.
- (b) If the Company is the aggrieved party, Article 6.5 of the Implementation Agreement shall apply.


  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyarthi Bhavanam  
 Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**




**13.6 Liability for other losses, damages etc.**

Save and except as expressly provided in this Article 13, no Party hereto shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event.

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

for **AYYAPPA HYDROPOWER LTD**



**DIRECTOR/ AUTHORISED SIGNATORY**

**ARTICLE 14**  
**EVENTS OF DEFAULT AND TERMINATION**

**14.1 Events of Default**

**a) Company Event of Default**

Any of the following events shall constitute an event of default by the Company ("Company Event of Default") unless such event has occurred as a result of a KSEBL Event of Default or a Force Majeure Event.

- (i) If the Project is designed, constructed or completed in a manner that materially deviates from the provisions of the Techno Economic Feasibility Clearance or in a manner that deviated from Prudent Utility Practices.
- (ii) if the Company wilfully or recklessly fails in material respect to operate and maintain the Project in accordance with Prudent Utility Practices or as per the requirements of this Agreement;
- (iii) failed to construct the transmission lines for connectivity to the grid, if applicable.
- (iv) if the Company does not comply with Despatch Instructions.
- (v) any representation made or warranties given by the Company under this Agreement is found to be false or misleading.
- (vi) the Company has otherwise been in material breach of any of its other obligations under this Agreement.

**(b) KSEBL Event of Default**

Any of the following events shall constitute an event of default by KSEBL ("KSEBL Event of Default"), unless caused by a Company Event of Default or a Force Majeure Event:

- (i) KSEBL is in breach of any of its obligations under this Agreement except those for which specific remedy has been provided elsewhere, and has failed to cure such breach within 30 (thirty) days of receipt of notice thereof issued by the Company.
- (ii) KSEBL has repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement.
- (iii) KSEBL has failed to make payment of undisputed amount of the monthly bills of three consecutive operational months (90 days), within the date of payment in respect of the monthly bill for third such consecutive month;
- (iv) KSEBL has delayed the payment of Tariff that has fallen due in terms of this Agreement beyond 3 consecutive months.

*[Signature]*  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, V. Vaidyanathan Road,  
Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**

*[Signature]*  
**DIRECTOR/ AUTHORISED SIGNATORY**

## 14.2 Termination due to Company Events of Default

### (a) Termination

- (i) Without prejudice to any other right or remedy which KSEBL may have in respect thereof under this Agreement, upon the occurrence of a Company Event of Default, KSEBL shall subject to the provisions of the Substitution Agreement, be entitled to terminate this Agreement as hereinafter provided, under due intimation to the Government.
- (ii) If KSEBL decides to terminate this Agreement pursuant to preceding sub-clause (i), it shall in the first instance issue Preliminary Notice to the Company. Within 30 days of receipt of the Preliminary Notice, the Company shall submit to KSEBL in sufficient detail, the manner in which it proposes to cure the underlying Event of Default (the "Company's Proposal to Rectify"). In case of non submission of the Company's Proposal to Rectify within the said period of 30 days, KSEBL shall be entitled to terminate this Agreement by issuing Termination Notice, and to appropriate the Performance Security, if subsisting.
- (iii) If the Company's Proposal to Rectify is submitted within the period stipulated therefore, the Company shall have further period of 30 days to remedy/ cure the underlying Event of Default. If, however the Company fails to remedy/ cure the underlying Event of Default within such further period allowed, KSEBL shall be entitled to terminate this Agreement by issue of Termination Notice and to appropriate the Performance Security if subsisting.

### (b) Termination Notice


If KSEBL having become entitled to do so decides to terminate this Agreement pursuant to the preceding clause (a), it shall issue Termination Notice setting out:


- (i) in sufficient detail the underlying Event of Default;
- (ii) the Termination Date which shall be a date occurring not earlier than 60 day from the date of Termination Notice;
- (iii) any other relevant information.

### (c) Obligation of Parties

Following issue of Termination Notice by KSEBL, the Parties (Company/KSEBL) shall promptly take all such steps as may be necessary or required to ensure that;

- (i) until Termination the Parties shall, to the fullest extent possible, discharge their respective obligations so as to maintain the continuity of service to the users of the Project Facilities; and
- (ii) the Project Site and Project Facilities are handed over to Government / KSEBL duly authorized by the Government on the Termination Date free from any encumbrance.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
 SAFETY COMMISSIONER  
 KSE Board, Vidyuthi Bhavanam  
 Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**



**(d) Withdrawal of Termination Notice**

Notwithstanding anything inconsistent contained in this Agreement, if the Company who has been served with the Termination Notice cures the underlying Event of Default to the satisfaction of KSEBL at any time before the Termination occurs, the Termination Notice shall be withdrawn by KSEBL, which had issued the same.

Provided that the Company in breach shall compensate KSEBL direct costs / consequences occasioned by the Event of Default which caused the issue of Termination Notice.

**14.3 Consequence due to KSEBL Event of Default**

In the event of KSEBL Event of Default as per clause 14.1(b), KSEBL shall provide a Standby Letter of Credit in the State Bank of Travancore, KSEB Admn. Complex Branch, Pattom, Thiruvananthapuram, which shall be equal to 1 month's bill amount which is arrived as per the provisions in Clause 8.2. The Standby LC can be operated only in the event of default as per provisions of sub article 14.1(b).

**14.4 Termination Payments:**

If the Agreement is terminated due to Company Event of Default, KSEBL shall not be paying any termination payment to the Company since Government of Kerala is responsible for all such settlements.

**14.5 Termination on account of Termination of Implementation Agreement**

The Agreement shall get terminated in the event of termination of the Implementation Agreement with Government of Kerala without any liability to either Party on this account. KSEBL shall not be liable for any claims by the Company under the termination provisions of the Implementation Agreement. The Company shall, however, in such an event keep KSEBL informed of various stages of the process of termination of Implementation Agreement.


**14.6 Obligations of KSEBL on Termination**

KSEBL shall pay all undisputed outstanding dues of the Company as per the provisions of this Agreement.


**14.7 Obligations of the Company on Termination**

Upon Termination of this Agreement and upon payment of the Termination Payment consequential to by the Government termination of Implementation Agreement, the Company shall:

- (a) transfer and assign to KSEBL, after receipt of Government approval all of its rights, title and interests in the Project, except for the cash in hand or any amount to the credit of the Company in bank accounts, trade and book debts or receivables accruing to the Company prior to transfer date unless due consideration for these can be mutually agreed upon between the parties.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSEBL

For **AYYAPPA HYDROPOWER LTD**

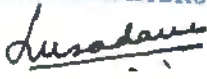
  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (b) If so required by KSEBL, make efforts to procure the novation (or failing that, assignment of the underlying rights held by the Company) to KSEBL of any relevant construction or any other contract relating to the Project on such terms as KSEBL may reasonably require.
- (c) Upon the written request of KSEBL, sign, execute and deliver, or cause to be signed, executed and delivered, and do or make, any and all agreements, instruments, papers, deeds, acts or things, supplemental, confirmatory or otherwise as may reasonably be required by KSEBL for the purpose of or in connection with the transfer set forth, including without intimation, transferring to KSEBL all items of equipment specifications, manufacturer's operation and maintenance manuals, schedules of protection schemes and protective relay settings, and signed and sealed copies of all as-built drawings for the Project, including civil and mechanical works:

Provided that a transfer of the Project in accordance with the provisions of this clause shall be deemed to be a hand-back of the Project to the Government under the Implementation Agreement.

- (d) Continue to be responsible for all liabilities and obligations that have accrued prior to such transfer.

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

## ARTICLE 15 DISPUTE RESOLUTION

### 15.1 Amicable Resolution

- (a) Save where expressly stated to the contrary in this Agreement, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Agreement including disputes, if any, with regard to any acts, decision or opinion of KSEBL or the Independent Auditor and so notified in writing by any Party to the other Parties (the Dispute) shall in the first instance be resolved amicably in accordance with the procedure set forth in clause (b) below.
- (b) Either Party may require such Dispute to be referred to the Chairman & Managing Director, KSEBL and the Chief Executive Officer of the Company for the time being, for amicable settlement. Upon such reference, the two shall meet at the earliest mutual convenience and in any event within 15 days of such reference to discuss and attempt to amicably resolve the Dispute.
- (c) If the Dispute is not amicably settled within 30 (thirty) days of such meeting between the two, the dispute may be referred to the Government/ KSERC as the case may be and the decision shall be binding on both Parties and shall be final.

  
CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Patton, Thiruvananthapuram - 4

For AYYAPPA HYDROPOWER LTD

  
DIRECTOR/ AUTHORISED SIGNATORY



## ARTICLE 16 LIABILITY AND INDEMNITY

### 16.1 Limitation of Liability

Except as expressly provided in this Agreement, neither the Company nor KSEBL nor their respective officers, directors, agents, employees of Affiliates (or their officers, directors, agents or employees) shall be liable or responsible to the other Party or its Affiliates, officers, directors, agents, employees, successors or assigns (or their respective insurers) for incidental, indirect or consequential damages, connected with or resulting from performance or non-performance of this Agreement, or anything done in connection herewith, including claims in the nature of lost revenues, income or profits (other than payments expressly required and property due under this Agreement). KSEBL shall have no recourse against any officer, director or shareholder of the Company or any Affiliate of the Company or any of its officers, directors or shareholders. The Company shall have no recourse against any officer of KSEBL, or any affiliate of KSEBL or any of its officers:

Provided that this Article, a Party shall be liable to the other Party for any additional costs, expenses or loss suffered, arising directly from a wilful default of the Party's obligations under this Agreement.

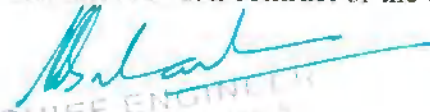
**Note:**

For the purposes of this Article, "wilful default" shall mean-

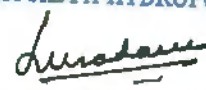
- i) an intentional or reckless breach / disregard by a Party of its obligations under this Agreement;
- ii) a failure to remedy a breach resulting from an error of judgement or mistake arising in good faith; or
- iii) a failure to remedy a breach resulting from an action in accordance with Prudent Industry Practice.

### 16.2 Indemnification

- (a) KSEBL shall bear responsibility for loss of or damage to property, death or injury to person (or any claim against the Company and / or its contractors in respect thereof) and all expenses relating thereto (including without limitation reasonable legal fees) suffered by the Company and/or its contractors in connection with the Project resulting from any negligent act or omission of KSEBL, without recourse to the Company and / or its contractors. KSEBL shall hold the Company and / or its contractors fully indemnified in respect thereof. The indemnity shall not extend to any loss, damage, death or injury (or any claim in respect thereof) or any expenses relating thereto to the extent that it was caused by any act or omission of the Company and / or its contractors to take reasonable steps in mitigation thereof. Provided that nothing in this sub article 16.2 (a) of this agreement shall apply to any loss, damage, cost or expense in respect of which and to the extent that, the Company and / or its Contractors are compensated pursuant to the terms of any insurance, or other contracts such as the construction contract or the operation and maintenance contract.

  
**CHIEF ENGINEER**  
 Corporate Planning &  
**SAFETY COMMITTEE**  
 KSE Board, Vyttila, Kochi  
 Padam, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**

  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (b) The Company shall bear responsibility for loss of or damage to property, death or injury to person (or any claim against KSEBL and / or its contractors in respect thereof) and all expenses relating thereto (including without limitation reasonable legal fees) suffered by KSEBL in connection with the Project resulting from any negligent act or omission of the Company and / or its contractors, without recourse to KSEBL. The Company shall hold KSEBL fully indemnified in respect thereof. The said indemnity shall not extend to any loss, damage, death or injury (or any claim in respect thereof) or any expenses relating thereto to the extent that it was caused by any act or omission of KSEBL or the failure of KSEBL to take reasonable steps in mitigation thereof. Provided that nothing in this sub article of this agreement shall apply to any loss, damage, cost or expense in respect of which and to the extent that KSEBL is compensated pursuant to the terms of any insurance, agreement or through any other means.
- (c) In the event such injury or damage results from the joint or concurrent, negligent or intentional acts of the Parties, each shall be liable under this indemnification in proportion to its relative degree of fault.

### 16.3 Intimation of Proceedings


- (a) Where a Party receives a claim from a third party in respect of which it is claimed to be indemnified under sub article 16.2 it shall promptly intimate the other party of such claims.
- (b) Neither Party shall settle or compromise any claim, action, suit nor shall proceeding with third party in respect of which it is entitled to be indemnified by the other party without the prior written consent of that Party, such consent not be unreasonably withheld or delayed.

### 16.4 Defence of Claims

The indemnified party shall have the right to contest, defend, and litigate any claim, action, suit or proceeding by any third party alleged or asserted against such indemnified Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and the reasonable costs and expenses thereof shall be subject to the indemnification obligations of the indemnifying Party hereunder; provided, however, that if the indemnifying Party acknowledges in writing its obligations to indemnify the indemnified Party in respect of loss to the full extent provided by Article 16.2 of this Agreement, the indemnifying Party shall be entitled, at its option to assume and control the defence of such claim, action, suit or proceeding, liabilities, payments and obligations at its expense and through counsel of its choice if it gives prompt notice of its intention to do so to the indemnified Party and reimburses the indemnified Party for the reasonable costs and expenses incurred by the indemnified Party prior to the assumption by the indemnifying Party of such defence. The indemnified Party shall not be entitled to settle or compromise any such claim, action, suit or proceeding without the prior written consent of the indemnifying Party, which consent shall not be unreasonably withheld or delayed.

Further, the indemnified Party shall have the right to employ its own counsel and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of such indemnified Party, when and as incurred unless,-

  
**CHIEF ENGINEER**  
 (Corporate Planning) &  
**SAFETY COMMISSIONER**  
 KSE Board, Vidyuthi Bhavanam  
 Pattom Thiruvananthapuram - 4

For AYYAPPA HYDROPOWER L1  
  
**DIRECTOR/ AUTHORISED SIGNATORY**

- (a) the employment of counsel by such indemnified Party has been authorised in writing by the indemnifying party,
- (b) the indemnified Party shall have reasonably concluded that there may be a conflict of interest between the indemnifying Party and the indemnified Party in the conduct of the defence of such action,
- (c) the indemnifying Party shall not in fact have employed independent counsel reasonably satisfactory to the indemnified Party to assume the defence of such action; and shall have been so intimated by the indemnified Party, or
- (d) the indemnified Party shall have reasonably concluded and specifically intimated the indemnifying Party either that there may be specific defences available to it which are different from or additional to those available to the indemnifying Party or that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of the Agreement.

If clause (b), (c) or (d) of the preceding sentence shall be applicable, then counsel for the indemnified Party shall have the right to direct defence of such claim, action, suit or proceeding on behalf of the indemnified Party and the reasonable fees and disbursements of such counsel shall constitute legal or other expense.

#### 16.5 Assignment and Charges

No Party shall assign this Agreement or the rights, benefits and obligations hereunder save and except with prior consent of the other Party. Provided the Company can create/ assign all its rights and benefits under this Agreement as security for indebtedness, in favour of the Lenders and working capital providers for the Project;

  
**CHIEF ENGINEER**  
(Corporate Planning) &  
**SAFETY COMMISSIONER**  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**




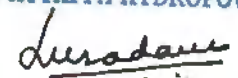
**DIRECTOR/ AUTHORISED SIGNATORY**



**ARTICLE 17**  
**MISCELLANEOUS PROVISIONS**

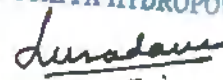
- 17.1 Any variation, waiver or modification of any of the terms of this Agreement shall be valid only if communicated in writing and agreed and signed by / or on behalf of the parties hereto.
- 17.2 The invalidity or unenforceability for any reason of any part of this Agreement shall not prejudice or affect the validity or enforceability of the remainder.
- 17.3 The failure of any party to insist in one or more instances upon the strict performance of any of the provisions of this Agreement or to take advantage of any of its rights hereunder shall not be construed as waiver of any such provisions or relinquishment of any such rights but the same shall continue in full force and effect.
- 17.4 Unless the context otherwise requires, every arrangement, procedure or any other matter which is, under any of the provisions of this Agreement, required to be mutually agreed upon between the parties, shall be concluded by a written agreement between the parties.
- 17.5 The Agreement shall not be interpreted or construed to create an association, joint venture, or partnership between the Parties or to impose any partnership obligation or liability upon either Party. Neither Party shall have any right, power or authority to enter into any Agreement or undertaking for or act on behalf of or to act as or be an agent or representative of or to otherwise bind, the other Party.
- 17.6 Cancellation, expiration or earlier termination of the Agreement shall not relieve the Parties of obligations that by their nature should survive such cancellation, expiration or termination, including without limitations, warranties, remedies, promises of indemnity and confidentiality; provided, however, that all obligations surviving the cancellation, expiration or early termination of the Agreement shall only survive for a period of 5 (five) years.
- 17.7 The language of the Agreement shall be English. All documents, notices, waivers and all other communication written or otherwise between the Parties in connection with the Agreement shall be in English language.
- 17.8 The Agreement and the rights and obligations hereunder shall be interpreted, construed and governed by the Laws of India, as in force, from time to time.
- 17.9 The Agreement Schedules and annexure attached hereto are intended by the Parties as the final expression of their Agreement and are intended also as a complete and exclusive statement. All prior written or oral understandings, offers or other communications of every kind pertaining to the sale or purchase of Electrical output hereunder between KSEBL and the Company are hereby abrogated and withdrawn.
- 17.10 Free transfer of share of the company after the commercial operation of project shall be permitted subject to the applicability of relevant laws, with the concurrence of Government and KSEBL.

  
CHIEF ENGINEER  
(Corporate Planning)  
SAFETY COMMISSIONER  
KSE Board, Vythiri, Ernakulam  
Pattom, Thiruvananthapuram

For **AYYAPPA HYDROPOWER LTD**  
  
DIRECTOR/ AUTHORISED SIGNATORY

- 17.11 The Agreement shall not confer any right of suit or action, whatsoever, on any third party.
- 17.12 The Company shall obtain and maintain necessary policies of insurance during the term of this agreement consistent with prudent utility practice.
- 17.13 Under no circumstances shall KSEBL undertake any contingent liability by way of providing guarantee etc. for Company for implementing the Project.
- 17.14 This Agreement shall be governed by the laws of India. The courts at Thiruvananthapuram shall have jurisdiction over all matters arising out of or relating to this agreement.

  
CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

For **AYYAPPA HYDROPOWER LTD**  
  
DIRECTOR/ AUTHORISED SIGNATORY

**ARTICLE 18  
INTIMATION**

- 18.1 Any intimation or communication required to be in writing hereunder shall be given by any of the following means: registered, certified, or first class mail, telex, facsimile or telegram. Such intimation or communication shall be sent to the respective Parties at their addresses listed below. Except as expressly provided herein, any intimation shall be deemed to have been given on the seventh day of despatch. Any intimation given by first class mail shall be considered sent at the time of posting. Communications by telex, telecopy, or telegram shall be confirmed by depositing a copy of the same in the post office for transmission by registered, certified or first class mail in an envelope properly addressed as follows:

In the case of KSEBL

To

Chief Engineer (Corporate Planning)  
Vydyuthi Bhavanam  
Pattom, Thiruvananthapuram - 695004  
Kerala State  
Phone: 0471-2447404  
Fax: 0471-2558340  
Email: [cecplg@ksebnet.com](mailto:cecplg@ksebnet.com)

In the case of the Company


**Technical Matters**

To

Factory Manager, Karikkayam SHEP  
AHPL, Chittar,  
Pathanamthitta District  
Kerala State  
Phone: 04735-255380  
Fax: 04735-255380  
Email: [ahepkkm@gmail.com](mailto:ahepkkm@gmail.com)

**Commercial Matters**

Executive Director  
Energy Development Company Ltd  
"EDCL HOUSE"  
1A, Elgin Road  
Kolkata - 700 020  
West Bengal  
Phone: 91-033-30534983 / 30534990  
Fax: 91-033-22903298  
Email: [saraf.sanjiv@gmail.com](mailto:saraf.sanjiv@gmail.com)  
[monitor.cal@edclgroup.com](mailto:monitor.cal@edclgroup.com)

  
**CHIEF ENGINEER**  
{Corporate Planning &  
SAFETY COMMITTEE MEMBER  
KSE Board V  
Pattom, Thiruvananthapuram

For AYYAPPA HYDROPOWER LTD

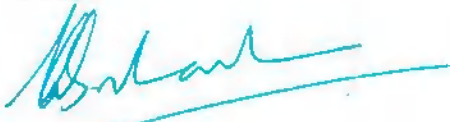
  
DIRECTOR/ AUTHORISED SIGNATORY



18.2 Any Party may, by 15 (fifteen) days' written notice to the other, change the representative or the address to which such notices and communications are to be sent.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed this 14<sup>th</sup> day of July Two Thousand and Fourteen at Thiruvananthapuram.

SIGNED BY



For and on behalf of  
Kerala State Electricity Board Limited


SIGNED BY




For and on behalf of  
Ayyappa Hydro Power Limited

CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

In the presence of witness:



1.   
Padmakumar G.  
Executive Engineer (Ele.)  
Planning Cell  
o/o The Chief Engineer  
Corporate Planning  
K.S.E. Board, Pattom  
Thiruvananthapuram-695 004
- 2.



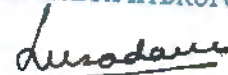
CHIEF ENGINEER  
(Corporate Planning) &  
SAFETY COMMISSIONER  
KSE Board, Vidyuthi Bhavanam  
Pattom, Thiruvananthapuram - 4

The common seal of Ayyappa Hydro Power Limited, (the Company) was pursuant to a resolution of its Board of Directors passed on that behalf on the Company on 29<sup>th</sup> May 2004 (year) hereunto affixed

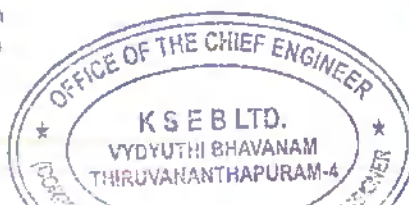
In the presence of witness: -

1. SANJIV SARAF   
S/o. Sh. B.N. SARAF  
1837, Sector-28, Faridabad -121008
2. VANDANA THAKER   
47A, SATISH MUKHERJEE ROAD,  
KOLKATA - 700026

For AYYAPPA HYDROPOWER LTD



DIRECTOR/ AUTHORISED SIGNATORY







കേരളം കേരल KERALA

AN 651008

### DEED OF ADDENDUM

This deed of addendum (the "Addendum") is made on this...<sup>15<sup>th</sup></sup> day of January...2015 at Thiruvananthapuram to amend certain provisions of the Power Purchase Agreement entered into between Kerala State Electricity Board Ltd and M/s. Ayyappa Hydro Power Ltd on 14<sup>th</sup> July 2014 (hereinafter referred as PPA)

BETWEEN

Kerala State Electricity Board Limited, a Government Company duly incorporated under the provisions of the Companies Act, 1956, hereinafter referred as 'KSEBL', having its registered office at Vydyuthi Bhavanam, Pattom, Thiruvananthapuram of the FIRST PART

AND

M/s. Ayyappa Hydro Power Ltd, a Company duly incorporated under the provisions of the Companies Act, 1956 having its registered office at 'EDCL House', 1A, Elgin Road, Kolkata - 700 020 (hereinafter referred to as 'the Company'), which expression shall, when the context so admits or implies be deemed to include its successors, legal heirs and/or assignees as well, of the SECOND PART



Registered Office: Vydyuthi Bhavanam, Pattom, Thiruvananthapuram-695004

Website: www.kseb.in



X  
For **AYYAPPA HYDROPOWER LTD**  
*A.K. Sadani*  
A.K. Sadani  
DIRECTOR/ AUTHORISED SIGNATORY



WHEREAS:

A. The Company informed KSEBL that Indian Renewable Energy Development Agency Limited (IREDA) has agreed to finance the Karikkayam SHP developed by M/s. Ayyappa Hydro Power Ltd and the Company is intend to avail a loan from IREDA, for which a loan agreement is necessary. As per the loan agreement with IREDA, all sale proceeds under the Karikkayam project are to be deposited in a Trust and Retention Account (TRA).

B. Hence, the Company requested KSEBL to make entire payment by RTGS/NEFT/ Cheque towards sale of power in the TRA as per the details mentioned hereunder:

Account title : AYYAPPA HYDRO POWER LTD A/C IREDA LTD  
Account Number : 019080200000174  
IFSC Code : YESB0000190  
Bank : Yes Bank Ltd  
Branch address : 56A, Hemanta Basu Sarani, Stephen House, Kolkata -700001

NOW THEREFORE in consideration of the foregoing, mutual agreements and covenants contained in this Addendum, the parties hereto agree as follows:

1. The Recitals of this Addendum form an integral part of PPA and shall be construed to be binding between the parties.
2. The parties agree that all amounts payable to the Company in accordance with the Agreement shall be paid to the account detailed under clause B with effect from date of signing of this Addendum.
3. Provisions of the PPA shall be modified mutatis mutandis so as to be consistent with the foregoing clauses. All dates, amounts and arrangements set out in the Agreement shall be read as properly amended, and, if necessary substituted with the relevant language or clause consistent with this new agreement. Apart from the provisions set out above, the remaining provision of the Agreement shall remain in full force and effect.





*[Signature]*  
DIRECTOR (RE & P)

X  
For AYYAPPA HYDROPOWER LTD  
*[Signature]*  
L.K. Sadani  
DIRECTOR/ AUTHORISED SIGNATORY




IN WITNESS WHEREOF, the parties hereto have caused this deed of Addendum to be executed this 15<sup>th</sup>.....day of Two Thousand and Pittem.....at Thiruvananthapuram

SIGNED BY


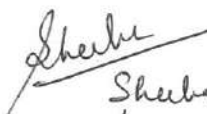
  
For and on behalf of **DIRECTOR (RE & P)**  
Kerala State Electricity Board Limited  


SIGNED BY

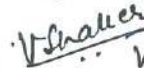

  
For **AYYAPPA HYDROPOWER LTD**  
For and on behalf of **DIRECTOR/ AUTHORISED SIGNATORY**  
Ayyappa Hydro Power Limited

The common seal of Ayyappa Hydro Power Limited, pursuant to a resolution of its Board of Directors passed on that behalf on the Company on 29-5-2014 (year) hereunto affixed

In the presence of witness:

1.   
Padmakumar. A  
EE
2.   
Sheeba Evans  
AEE, % D(CRE & P)

In the presence of witness:

1.   
VANDANA THAKER  
47A, S.M. ROAD.  
KOLKATA - 700026.
2.   
Foby Antony  
AHP.

**SCHEDULE 1**  
**PROJECT FACILITIES**

(Brief provisions of the project report of the company as per approved TEFR)

**SALIENT FEATURES**

Sl. No.	Item	Details
<b>1.0</b>	<b>General Information</b>	
1.1	Name of the Project	: Karikkayam Small Hydro Project (Phase-I)
1.2	Scope of the scheme	: Generation and Transmission of Hydro Electric Power
1.3	Source	: Releases from Kakkad river at Chittar
<b>1.4</b>	<b>Location</b>	:
a)	State	: Kerala
b)	Region	: South India
c)	District	: Panthanamthitta
d)	Taluk	: Ranni
e)	Panchayat	: Chittar
f)	Village	: Chittar
g)	River Basin	: Kakkad River
<b>1.5</b>	<b>Geographical Co-ordinates</b>	
a)	Latitude	: 9° 20' 00" N
b)	Longitude	: 76° 56' 00" E
<b>1.6</b>	<b>Catchment</b>	
a)	River	: Kakkad, Tributary of Pamba
b)	Catchment of Kakkad project	: 36 km <sup>2</sup>
c)	Free catchment of downstream of Kakkad Project up to Ullunkal	: 188 km <sup>2</sup>
d)	Catchment between Ullunkal and Karikkayam	: 47 km <sup>2</sup>
e)	Total catchment of Kakkad up to Karikkayam	: 271 km <sup>2</sup>
f)	Free Catchment of Karikkayam downstream of Kakkad	: 235 km <sup>2</sup>
<b>1.7</b>	<b>Hydrology</b>	
a)	Precipitation	: 3547 mm (Refer attachment- 2, K.SEB & GEI. DPR)
b)	Average run off 11 years average	: 1695 mm <sup>3</sup>
c)	Design Flood	: 1260 m <sup>3</sup> /sec
<b>1.8</b>	<b>Climate</b>	
a)	Maximum Temperature	: 90 <sup>0</sup> F
b)	Minimum Temperature	: 76 <sup>0</sup> F
c)	Humidity	: 91% to 95%
<b>1.9</b>	<b>Access to Site</b>	
a)	Approach by Road	: 23 km by road from Pathanamthitta town
b)	Nearest Railway Station	: Chengannur (52 km by road from Karikkayam)



<b>2.0 Diversion Structure</b>	
a) Type of Structure	: Concrete gravity weir
b) Total Length	: 172.00 m
c) Normal Bed Level	: EL 29.80 m (u/s)
d) Deepest Bed Level	: EL 28.80 m (u/s) & EL 26.00 m (d/s)
e) Top of Weir	: EL 42.50 m
f) Height above bed	: 23.2 m
g) Top width of weir	: 5.5 m
h) Down Stream Profile	: 0.7 to 1
j) Upstream Slope	: Vertical
k) Maximum discharge capacity	: 1260 Cumecs
l) Crest level of spillway/FRL	: EL 42.5 FRL – EL 49.00
m) Maximum water level (MWL)	: EL 49.00 (Upstream)
n) MDDL	: EL+ 38.36 m
o) Live Storage	: 4.13 mm <sup>3</sup>
n) Gross storage at FRL	: 4.87 mm <sup>3</sup>
p) Water Spread	: 77 Ha
q) No. of blocks	: 9
r) Length of non-overflow section right bank	: 33.44 m
s) Length of non-overflow section on left bank	: 40.97 m
<b>3.0 Penstocks</b>	
a) Dia. of penstock	: 3.8 m
b) No. of Penstocks	: 3
c) Thickness of Pipe	: 12 mm
d) Discharge in one pipe	: 40.43 Cumecs
e) Length of Penstock	: 18.50 m
<b>4.0 Powerhouse</b>	
a) Type	: Surface
b) Gross Head	: 13.5m
c) Design Net Head	: 12.232 m
d) Operated Net Head / Rated Head	: 12.232 m (Phase-I) & 16.5 m (Phase – II)
e) Maximum Head	: 13.5 m (Phase – I) & 20 m (Phase-II)
f) Minimum Head	: 10 m
g) Length of P.H. (Overall)	: 36.265 m
h) Width	: 37.80 m
i) Height	: 23.75 m
j) Machine Hall Floor Level	: EL 26.36 m
k) Service bay Floor Level	: EL 36.00 m
l) Normal Tail Water Level	: EL 29.00 m
m) Central Line of Machine	: EL 26.50 m
n) Installed Capacity	: 3 x 5000 KW
<b>5.0 Turbine</b>	
a) Type	: Horizontal Shaft, S Type, Full Kaplan
b) Number	: 3
c) Capacity	: 5000 kW each



d)	Power	:	The realistic energy generation assumed in the DPR is based on Flow Duration Table works out to be 66.68 MU (Annual Energy). Financial analysis is based on this figure, and net saleable energy generation works out to be 62.40 MU (Computed from Flow Duration Table)
<b>6.0</b>	<b>Tailrace</b>		
a)	Mode of Discharge	:	Direct to River
b)	Normal Tail Water Level	:	EL 29.00
c)	No. of Draft Tube vents	:	3
d)	Size of Draft tube gate	:	3.58 x 5.20 m
<b>7.0</b>	<b>Power Evacuation</b>	:	
a)	Voltage Level	:	110 kV
b)	Number of Circuits	:	Loop-in-Loop-Out of Pathanamthitta- Kakkad 110 kV Line
c)	Length of Transmission Line	:	1.25 km
d)	Interconnection Point	:	Pathanamthitta - Kakkad 110 kV Line

**SCHEDULE 2**  
**PERFORMANCE TEST PROCEDURE**

S3.1 Before initial synchronisation, not later than ninety (90) days before the Date of Completion, the Company shall supply the following documents to KSEBL for approval:

- a) Final single line electric diagram of the Project;
- b) Electrical protection study report;
- c) Start-up procedure and on-grid testing program; and
- d) Operating procedure and other agreements as described in Section 8

S3.2 Before conducting performance test, the Company shall supply the following documents to KSEBL for approval:

- a) Report of completion of on-grid testing program
- b) Copies of insurance policies covering the Project

S3.3 The Company shall give a seven (7) day notice to KSEBL/authorized agency before starting the Performance Test. KSEBL/authorized agency may depute an Engineer to witness the Performance Test.

S3.4 Scope of Performance Test

- (i) During each Performance Test, the Project shall be operated in a manner similar to normal Commercial operation with all auxiliary loads and losses associated.
- (ii) The Performance Test will be considered successful if the Project operates for a<sup>1</sup>period of<sup>2</sup>fourteen days at available Water Head and Discharge, with a minimum of one day's continuous operation at or above 90% of its Nominal Capacity of operation within the Technical Limits specified in Schedule -2.

S3.5 Test Report

The Test Report shall include the following:-

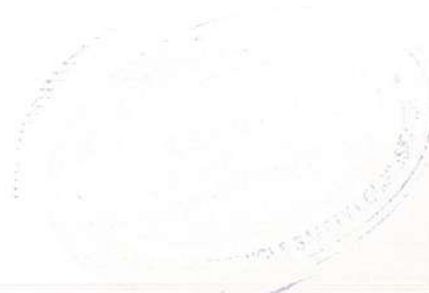
- (i) Kilowatt-hour and kilo-Watt meter readings at Inter-Connection Point to verify the net output. Reproduced copies of actual log sheets are preferred wherever possible.
- (ii) For turbine unit(s), a curve of net capability, with test result noted on the graph.
- (iii) Calculation of Tested Capacity inclusive of notes explaining reason for any failure to achieve Nominal Capacity, and intended date and means of correcting the deficiency or re-rating the unit capability.
- (iv) Test Report and settings of all relays should be intimated to KSEBL before Commercial Operation

**SCHEDULE 3  
TECHNICAL LIMITS**

- |   |   |   |
|---|---|---|
| 1. Type of turbine  | : | Horizontal -S Type- Full Kaplan                       |
| 2. Prototype performance curve of turbine at various ranges of head and discharge | : | Attached  |
| 3. Generation voltage (nominal)   | : | 11 kV   |
| 4. Power factor   | : | 0.90 lagging and 0.95 leading                         |
| 5. Frequency range  | : | 48.5 Hz to 51.5 Hz                                    |
| 6. Nominal grid frequency   | : | 50 Hz   |
| 7. Grid voltage   | : | 110 kV  |
| 8. Load variation during normal operation   | : | 0 to 100% , in steps not exceeding 25% load at a time |

**Note:**

1. Each unit shall be capable of generating and delivering reactive power corresponding to a pf as specified in item (3) above
2. Operation of the project outside the voltage and pf range specified above will result in a reduction of pf output consistent with generator capability curves which results in penal charges.
3. Due to system contingencies, the voltage or frequency can go below the prescribed limits. In such cases, KSEB shall not be made responsible to compensate the generator.





**SCHEDULE 4**  
**ELECTRICAL SYSTEM CHARACTERISTICS AND FUNCTIONAL**  
**SPECIFICATIONS**

(After receiving data from TDPS as per TDPS format)

1. Generator Terminal Voltage	:	11 kV
2. Frequency	:	50 Hz
3. Speed	:	750 RPM
4. Power Factor	:	0.90 lag
5. Generator Efficiency curve	:	Refer Annexure I
6. Rated Output	:	5MW, 5.882 MVA
9. Single line diagram	:	Refer Annexure II
10 Type of Exciter	:	Brush less exciter (static exciter)
11 Exciter Voltage	:	84 V
12 Exciter Current	:	5.5 A
13 Automatic Voltage Regulator details	:	Senelec Make Brushless Exciter
14 Possibility of running the Machine as Synchronous Condenser	:	Yes
15 kVAR that can be supplied	:	.....



**SCHEDULE 5  
LIST OF PERMITS AND CLEARANCES**

Statutory permits and clearances or otherwise, : As per Schedule E of the  
as required for execution and operation of Implementation Agreement  
Hydel Projects

