

Tender Document

For

Preparation and Submission of Detailed Project Report (DPR) / Techno Economic Feasibility Report (TEFR) of Madatharuvi SHP at Pathanamthitta District with detailed analysis, drawings etc to EMC Kerala.

Tender No: EMC/469/2022-ETB-5/T08



**Energy Management Centre - Kerala,
Sreekariyam.P.O
Thiruvananthapuram - 695 017
Kerala**

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SECTION-I

SUMMARY

1. Tender Number & Title

Tender No: EMC/469/2022-ETB-5/T08

Tender Title: Preparation and Submission of Detailed Project Report (DPR) / Techno Economic Feasibility Report (TEFR) of Madatharuvi SHP at Pathanamthitta District with detailed analysis, drawings etc to Energy Management Centre- Kerala

2. About Energy Management Centre – Kerala

Energy Management Centre – Kerala (EMC) was established in 1996 as an autonomous organization under the Department of Power, Government of Kerala. Government of Kerala, vide G.O (P) No./3/03/PD dated 18.12.2003 has notified Energy Management Centre (EMC) as the State Designated Agency (SDA) to co-ordinate, regulate and enforce the provisions of the Energy Conservation Act, 2001 within the State of Kerala.

3. Background

EMC is the technical secretariate of Small Hydro Power Project in the state appointed by Government of Kerala. EMC SHP Cell has been striving for the utilization of untapped Small Hydro potential in the state from its inception.

As part of the development of Madatharuvi SHP, EMC invites tender from reputed Hydro Power Project Consultants having expertise in the preparation and detailed analysis of Small Hydro Power projects for the preparation submission of Detailed Project Report (DPR) / Techno Economic Feasibility Report (TEFR) of Madatharuvi SHP at Pathanamthitta District with detailed analysis, drawings etc to Energy Management Centre- Kerala

4. TERMS & CONDITIONS

This tender is being published online for Preparation and Submission of Detailed Project Report (DPR) / Techno Economic Feasibility Report (TEFR) of Madatharuvi SHP at Pathanamthitta District with detailed analysis, drawings etc to Energy Management Centre- Kerala. The tender is invited in the two-cover system from the eligible firms.

Tender Process:

The tender process shall consist of the following stages:

Downloading of tender document: Tender document will be available for free download on www.keralaenergy.gov.in, However, tender document fees shall be payable at the time of bid submission as stipulated in this tender document.

Publishing of Reply to Queries / Corrigendum: All corrigenda shall be published on www.keralaenergy.gov.in and shall not be available elsewhere.

Bid submission: Bidders have to submit their bids along with supporting documents to support their eligibility, as required in this tender document on www.keralaenergy.gov.in.

Opening of Technical Bid and Bidder short-listing: The technical bids will be opened, evaluated and short listed as per the eligibility criteria and technical qualifications. All documents in support of technical qualifications shall be submitted directly to EMC Office. Failure to submit the documents online will attract disqualification. Bids short listed by this process will be taken up for opening the financial bid.

Opening of Financial Bids: Bids of the technically qualified bidders shall only be considered for opening and evaluation of the financial bid on the date and time mentioned in critical date's section.

a. Documents Comprising Bid:

i. The First Stage (Pre-Qualification or Technical Cover based on 1st cover of 2 cover tender system):

Pre-Qualification or technical proposal shall contain the scanned copies of the following documents, which every bidder has to submit:

As mentioned in Clause 1 of Section II.

ii. The Second Stage (Financial Cover or as per tender cover system):

The Bidder shall complete the Price bid as per format given along with this tender.

Fixed price: Prices quoted by the Bidder shall be fixed during the bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable/ variable price quotation will be treated as non-responsive and rejected.

b. Tender Document Fees and Earnest Money Deposit (EMD)

The Bidder shall pay a tender document fee of Rs. 2500 (Plus 12% GST) and Earnest Money Deposit or Bid Security of Rs. 6,785/-. The Bid security is required to protect

EMC against the risk of Bidder's conduct, which would warrant the forfeiture of bid security. No bidders are exempted from paying the EMD and the tender fees.

5. Tender Schedule/Critical Dates

Publish Date	05-09-2022	Bid Opening Date	03-10-2022
Document download /Sale Start Date	05-09-2022	Document Download /Sale End Date	29-09-2022
Clarification Start Date	06-09-2022	Clarification End Date	15-09-2022
Bid Submission Start Date	17-09-2022	Bid Submission End Date	30-09-2022

SECTION-II

INSTRUCTION TO BIDDERS

1. Eligible Bidders

- 1.1 This invitation for Bids is open to all eligible bidders as per the eligibility criteria of this bidding document and that possess necessary license/certificate issued by Competent Authorities.
- 1.2 The bidder
- Shall be reputed Hydro Power Consultant companies registered in India.
 - Shall have undertaken at least one DPR/Project Report preparation for Small/Mini/Micro Hydel Project works in the last three years.
 - Shall not be blacklisted or debarred or suspended by the Government /any power utility for whatever the reason, prohibiting them not to continue in the business.

2. Scope of Services of the bidder

- 2.1. Generally the Scope of services shall be as detailed below;
- 2.1.1 The Consultant agrees to take total responsibility of the preparation of Detailed Project Report (hereinafter referred to as "DPR"), its hydrolic design and layout of various project features for all civil, electro-mechanical, hydro-mechanical and other related works such as transmission etc., including any additional improvements/alternatives/enhancements of the installed capacity of the project by designing the dimensions of all additional structures such as weirs, water conducting systems, surge shafts, forebay, penstock etc., as

required for Madatharuvi SHP. The DPR shall comprise of, but not limited to, project introduction, project purpose, infrastructure facilities, surveys and investigations, hydrology, preliminary geology, & detailing of environmental and social impact studies, power potential, hydro-mechanical works, electro-mechanical works, drawings in standard layout.

- 2.1.2 The Consultant agrees to be responsible for maintaining the quality of report, keeping the best practices in the field, and in line with the norms required by statutory bodies and funding agencies like NABARD, IREDA, MNRE, MOEF, CWC, CEA etc.
- 2.1.3 The Consultant also agrees to be responsible for handing over a bankable DPR for Madatharuvi SHP, to EMC Kerala, after completion in all respects.
- 2.1.4 The Consultant accepts the responsibility for presenting the DPR to the Technical Committee constituted by EMC Kerala.
- 2.1.5 Topographical surveying, hydrological data collection, preliminary geological investigation shall be under the consultants and the consultants agrees to bear all the expenses in this account. The Consultant agrees to coordinate the same as part of their scope, on request of EMC Kerala or their authorized representative.
- 2.1.6 Detailed Scope has been listed & attached in Annexure B.

3. Delivery Schedule

- a. The Consultant agrees to submit the DPR/TEFR with all systems and subsystems relevant from input to power evacuation, land requisition report, cost estimates, financial analysis within 6 months from the date of issue of Work Order.
- b. The Consultant agrees to submit 3 copies of the Final Report, including drawings and estimates to EMC Kerala

4. Cost of Bidding

- 4.1 The Bidder shall bear all costs associated with the preparation and submission of his bid, and the ENERGY MANAGEMENT CENTRE-KERALA, herein after referred to as "EMC ", will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

5. The Bidding Documents

- 5.1 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Documents. Failure to furnish all information required by the Bidding Documents or submission of a bid not substantially responsive to the Bidding Documents in every respect will be at the Bidders risk and may result in the rejection of its bid.

6. Amendment of Bidding Documents

- 6.1 At any time prior to the deadline for submission of bids, EMC may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by amendment.
- 6.2 The amendment will be notified in the website and will be binding on all the bidders who submit the tender document.
- 6.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, EMC may, at its discretion, extend the deadline for the submission of bids.

7. Preparation of Bids

7.1. Language of Bid

The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and EMC, shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the bid, the English translation shall govern.

7.2. Documents comprising the Bid

The bid prepared by the Bidder shall comprise the following components:

- a) A Bid Form and a Price Schedule completed in accordance with clause 4(c) of Section-I.
- b) Documentary evidence established in accordance with the relevant clause that the Bidder is eligible to bid and is qualified to perform the contract if bid is accepted.
- c) Documentary evidence established in accordance with the relevant clause that the goods and ancillary services to be supplied by the Bidder are eligible goods and services and conform to the Bidding Documents; and
- d) Earnest Money Deposit furnished in accordance with clause 4(d) of Section-I.

8. Bid Prices

- 8.1 Unless stated otherwise in the bidding documents, the contract shall be for the Preparation and Submission of Detailed Project Report (DPR) / Techno Economic Feasibility Report (TEFR) of Madatharuvi SHP at Pathanamthitta District with detailed analysis, drawings etc to Energy Management Centre- Kerala as described in the invitation for bid based on the schedule of unit rates and prices submitted by the bidder.

8.2 Fixed price

The rates and prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subjected to adjustment on any account.

9. Documents Establishing Bidders' Eligibility and qualifications

9.1 The Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualification to perform the Contract if its bid is accepted. For the purpose of this bidder shall meet the following qualification criteria as a minimum.

9.2 The documentary evidence of the Bidder's qualifications to perform the Contract if its bid is accepted shall be established to EMC's satisfaction that, the Bidder has the financial and business capability necessary to perform the Contract. To this end, all bids submitted shall include the following information.

- Duly Attested copies of documents relating to the Registration of the firm, Partnership deed, Articles of Association, Commercial Tax Registration /, Latest Income Tax Clearance certificate / PAN number from IT Department, GST registration, excise department registration certificates, etc.
- Details of experience and past consultancy and DPR preparation works completed/on-going for Government/ Private Organisations. (Name of Project, Contract reference, Name and detailed postal address of client, value of item etc. are to be furnished).
- Copy of latest Income tax clearance certificate, PAN card and GST registration.
- In case GST is not available relevant documents to state the same shall be provided.

10. Earnest Money Deposit (EMD)

10.1 The Bidder shall furnish, as part of its bid, Earnest Money Deposit (EMD) for the amount as a Demand Draft to Director Energy Management Centre, Payable at Trivandrum.

10.2 The Earnest Money Deposit (EMD) is required to protect EMC against the risk of Bidder's conduct, which would warrant the security's forfeiture.

10.3 The Earnest Money Deposit (EMD) of the unsuccessful bidders shall be refunded as promptly as possible, after the expiry of the period of bid Validity as prescribed in these documents

10.4 The Earnest Money Deposit (EMD) of the successful bidder will be adjusted towards the security deposit that will have to be deposited for the satisfactory fulfillment of the contract.

10.5 No interest shall be paid by EMC on the Earnest Money Deposit (EMD) furnished by the bidder.

10.6 The Earnest Money Deposit (EMD) may be forfeited:

- a. If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or
- b. In the case of successful Bidder, if the Bidder fails:
 - I. To sign the contract in accordance; or
 - II. To furnish performance security.

11. Validity of Bids

11.1 Bids shall remain valid for 90 days after the date of bid opening prescribed by EMC, A bid valid for a shorter period shall be rejected by EMC as non-responsive.

11.2. In exceptional circumstance, EMC may solicit the Bidders consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable or mail). The bid security provided under shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.

12. Variations in bidding conditions

12.1 The bidder shall submit offer, which comply fully with the requirements of the bidding documents, including the basic technical design as indicated in the drawings and specifications. Conditional bids are liable to be considered as non-responsive.

12.2. Bidder's Clarification

- a. The bidders can raise issues relating to the bid document and seek answers to queries on any matter before the bid clarification closing stage.

- b. The bidder is requested to submit any question in writing or by email to recheck not later than 6 days before the submission of the closing of the bid.
- c. Clarifications on bid will be published on the website.

13. Submission of bids

13.1. Bid Submission

The bidders are required to submit their bids online

- a. The bid shall be in two parts viz. Pre-Qualification bid and Price bid
- b. The price bids of those who qualified in the pre-qualification criteria will only be opened.

13.2. The bidders are required to forward the documents mentioned in the submittals part as hardcopy to Energy Management Centre Kerala within the date of closing of the tender.

14. Evaluation of Tender

14.1 The tender will be evaluated separately for technical bid and financial bid. The technical bid will be evaluated first and based on the eligibility of the tenderer. The financial bid of only technically qualified bidders shall be opened. The tenderer who qualifies the technical bid and has quoted lowest financial bid shall be given the work.

14.2 Bidders qualified in the Technical / Prequalification Bid even though the Bidders are meeting the above qualification requirements, they are liable to be disqualified / debarred / suspended / blacklisted if they have

- Furnished false / fabricated particulars in the forms, statements and /annexure submitted in proof of the qualification requirements and/or
- Not turned up for entering into an agreement, when called upon within the time specified in the letter of acceptance
- Record of poor progress such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.
- A history of criminal record in which the Bidder is involved if any.
- History of litigation with Government or their subsidiaries during the last 5 years in which the Bidder is involved.
- Any wrong declaration or hiding of information

14.3 Even while execution of the work, if found that the work was awarded to the Contractor based on false /fake certificates of experience, the Contractor will be blacklisted and work will be taken over.

14.4 Bidders are advised to find out the latest tax structure, applicability and rates before quoting. Further to reduce the billing difficulties, bidders are advised to quote the rates with not more than two decimal places.

15. Award of Contract

15.1. Award criteria

EMC shall award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest, provided further that the bidder has the capability and the resources to carry out the contract effectively.

15.2 EMC's right to vary quantities at time of award

EMC reserves the right at the time of award of contract to increase or decrease the quantity of goods and services specified in the schedule of requirement without any change in unit price or other terms and conditions.

15.3 EMC's Right to Accept Any Bid and to Reject Any or All Bids.

EMC reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for EMC's action.

16. Notification of Award

16.1 Prior to expiry of the period of bid validity prescribed in the bid documents EMC will notify the successful bidder by AOC (Award of Contract) confirmed in writing that his bid has been accepted. This letter (hereinafter and in the conditions of Contract referred to as "Letter of Acceptance") shall name the sum which EMC will pay to the tenderer in consideration of the execution, completion of the study by the tenderer as prescribed by the Contract (hereinafter and in the Conditions of the Contract).

16.2 The notification of the award will constitute the formation of the Contract.

16.3 Upon the furnishing by the successful bidder of a performance security in accordance with the clause 18 of Section-II, EMC will notify the unsuccessful bidders that their bids have been unsuccessful.

17. Signing of Contract

17.1 At the same time as EMC notifies the successful Bidder that its bid has been accepted, EMC will send the Bidder the Contract Form provided in the Bidding Documents, incorporating all agreements between the parties.

17.2 Within 7 days of receipt of the Contract form the successful Bidder shall sign and date the Contract and return it to EMC

17.3 A specimen of the form of contract is attached as Annexure A.

18. Performance Security

18.1 The successful tenderer shall, before signing the agreement and within 15 days of the receipt of notification of contract from EMC, deposit a sum equivalent to ten percent (5%) of the value of the contract as security for the satisfactory fulfillment of the contract less the amount of earnest money deposited by him along with his tender.

18.2 The proceeds of the performance security shall be payable to EMC as compensation for any loss resulting from Contractor's failure to complete its obligations under the Contract.

18.3 The performance security shall be denominated in Indian Rupees and shall be in the following form:

1. A Bank guarantee issued by a Nationalized Indian Bank/New Generation Bank/Scheduled bank/foreign bank operating in India.

2. The period of validity of security deposit shall be 60 days beyond the period of completion of all contractual obligations from the date of award of work.

18.4 The performance security will be discharged by EMC and returned to the tenderer after completion of the tenderer's performance obligations.

18.5 In the event of an increase in the Contract value, in actual execution, proportionate additional performance security shall be paid by the tenderer if called upon to do so.

18.6 In the event of a decrease in the Contract value the performance security shall be proportionately adjusted on the completion of the work.

18.7 No interest shall be paid by EMC for the amount deposited as Performance security with EMC.

18.8 If the successful tenderer fails to deposit the security and execute the agreement as stated above, the earnest money deposited by him will be forfeited to EMC and contract arranged elsewhere at the defaulter's risk and any loss incurred by EMC will be recovered from the defaulter who will, however, not be entitled to any gain accruing thereby. If the defaulting firm is a registered firm their registration is liable to be canceled.

18.9 In cases where a successful tender, after having made partial completion of work fails to fulfill the contracts in full, all or any part of the work have to be completed by means of another tender/quotation or by negotiation or from the next higher tenderer who had offered to carryout the work and the loss, if

any, caused to the EMC shall thereby together with such sums as may be fixed by the EMC towards damages be recovered from the defaulting tenderer. Even in cases where no alternate assignments are arranged for the work not completed, the security deposit of the defaulter shall be forfeited.

ANNEXURE A: GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS

1.1. In the contract, the following terms shall be incorporated as indicated.

- [1]. "The Contract" means the agreement entered into between EMC and the successful bidder, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all incorporated by reference therein:
- [2]. The "EMC Kerala" SHALL mean ENERGY MANAGEMENT CENTRE-KERALA.
- [3]. "The Tenderer/Contractor" means the successful bidder whose bid has been accepted by EMC Kerala and on whom a work order has been placed and shall include his heirs, legal representatives and assignees.
- [4]. "TEFR" means Techno-economic Feasibility Report / Detailed Project Report
- [5]. "DPR" means Detailed Project Report

2. SCOPE OF SERVICES:

2.1. Generally the Scope of services shall be as detailed below;

- [1]. The Consultant agrees to take total responsibility of the preparation of Detailed Project Report (hereinafter referred to as "DPR"), its hydro design and layout of various project features for all civil, electro-mechanical, hydro-mechanical and other related works such as transmission etc., including any additional improvements/alternatives/enhancements of the installed capacity of the project by designing the dimensions of all additional structures such as weirs, water conducting systems, surge shafts, forebay, penstock etc., as required for Madatharuvi SHP. The DPR shall comprise of, but not limited to, project introduction, project purpose, infrastructure facilities, surveys and investigations, hydrology, preliminary geology, & detailing of environmental and social impact studies, power potential, hydro-mechanical works, electro-mechanical works, drawings in standard layout. Detailed scope of services have been mentioned in the Annexure B of the tender document.
- [2]. The Consultant agrees to be responsible for maintaining the quality of report, keeping the best practices in the field, and in line with the norms required by statutory bodies and funding agencies like NABARD, IREDA, MNRE, MOEF, CWC, CEA etc.
- [3]. The Consultant also agrees to be responsible for handing over a bankable DPR for Madatharuvi SHP, to EMC Kerala, after completion in all respects.
- [4]. The Consultant accepts the responsibility for presenting the DPR to the Technical Clearance Committee constituted by Government of Kerala.
- [5]. Topographical surveying, hydrological data collection, preliminary geological investigation shall be under the consultants and the consultants agrees to bear all the expenses in this account. The Consultant agrees to coordinate the same as part of their scope, on request of EMC Kerala or their authorized representative.

3. DELIVERABLES:

3.1. The Consultant agrees to deliver the following to EMC Kerala as part of this TENDER:

- 1) Techno-economic Feasibility Report / Detailed Project Report with 3 copies of the Final Report in Hard copy and one soft copy (documents in MS office format and Drawings in AutoCAD *.dwg Format)

3.2. The Consultant also agrees to deliver the draft copies of the above documents in advance to EMC Kerala or their authorized representative for necessary approvals

4. DELIVERY SCHEDULE:

- [1]. The consultant agrees to submit an Investigation Report after the topographical survey with options for various aspects of the projects including details of land requirements.
- [2]. The Consultant agrees to submit the DPR/TEFR with all systems and subsystems relevant from input to power evacuation, land requisition report, cost estimates, financial analysis within 6 months from the date of issue of Work Order.
- [3]. The Consultant agrees to submit 3 copies of the Final Report, including drawings and estimates to EMC Kerala.

5. PAYMENT OF FEES:

5.1. EMC Kerala shall pay to the Consultant, a consultancy fee for the services rendered by him as per terms and conditions of contract.

5.2. Total detailed engineering consultancy charges shall be Rs./- (Rupees Only) inclusive of Goods & Service Taxes and other Government levies, as applicable. The amount shall be payable in phases as given below;

- [1]. 1st stage payment will be 30% of the total contract value on submission of the draft survey Drawings and acceptance by EMC.
- [2]. 2nd stage payment of 70% of the total contract value along with the final submission and presentation of DPR/TEFR technical evaluation committee and the successful acceptance by the committee.

5.3. The fee shall be including GST. Income tax shall be deducted at the time of release of each payment.

6. ADVANCE PAYMENTS:

6.1. Advance payments can be released to the Consultants as per the terms of this contract. However, the Consultant shall provide a Bank Guarantee to the effect and an affidavit in the prescribed

format, undertaking to deliver the services for which advance amounts are drawn, as per the agreement conditions and time frame.

7. PENALTY:

Any failure to complete the work within the scheduled time or within a duly approved extended time will attract liquidated damages. Liquidated damages shall be computed at the rate of 0.5% per week or part thereof of the total fee payable to the Consultant, subject to a maximum of 5% of the total fees.

8. DEFECT LIABILITY:

8.1. The Consultant shall redesign at no extra cost, any portion of his engineering and design work, which are found to be defective.

9. CONTRACT CANCELLATION:

9.1. EMC Kerala reserves the right to cancel Contract, after giving notice to the Consultant, if the Consultant defaults in the observance of any conditions contained in the contract or specification; has become insolvent; and/or has committed an act of bankruptcy; assigns the work of this contract to another consultant and without written consent of EMC Kerala;

10. TERMINATION OF AGREEMENT:

13.1. Failure to comply with EMC Kerala's instructions at any time during the contract period may lead to the cancellation of this Agreement.

13.2. This Agreement can be terminated by either party giving the other a written notice of not less than 30 (thirty) days, of their intention to do so, should either party fail substantially to perform his part of responsibilities/duties, provided the failure is not caused by the initiating party.

13.3. In the event of termination of the contract due to any act, omission, neglect or default on the part of the Consultant or due to closure of the business of the Consultant's firm, EMC shall have the right to terminate this agreement with immediate effect and to employ another Consultant to complete the work. In such an eventuality the Consultant shall provide a No Objection Certificate to enable EMC for employing another Consultant.

11. LIABILITY/ACCIDENT:

11.1. This contract is awarded to the **Consultant** with the explicit understanding that all liabilities arising out of this contract with respect to the claims by way of salary, wages, bonus benefits etc.

of the personnel employed by the **Consultant**, shall be entirely **Consultant's** responsibility and that EMC Kerala shall not be responsible for any such claims whatsoever. EMC Kerala will not carry any liability for any compensation for injuries, accidents, illness, etc of the staff employed by the **Consultant** and the **Consultant** will comply with all the legal obligations with respect to their organisation/employees, including fulfilling all the statutory requirements of Provident Fund, ESI cover, etc, as per the relevant rules.

12. SETTLEMENT OF DISPUTES AND JURISDICTION:

- 12.1. All parties in this agreement agree to make all efforts to settle disputes if any, arising out of and during the course of this contract by mutual discussion and the decision of the **Director, Energy Management Centre-Kerala, Sreekrishna Nagar, Sreekariyam P.O, Thiruvananthapuram-695017** shall be final on all disputes arising out of this contract.
- 12.2. If any dispute arising out of this contract agreement, could not be resolved in the afore-mentioned manner, then they shall be subject to the jurisdiction of the appropriate court at Thiruvananthapuram.

13. SEVERABILITY:

- 13.1. If any part of this contract is found by a court of competent jurisdiction or other competent authority to be invalid, unlawful or unenforceable, then such part will be severed from the remainder of this contract which will continue to be valid and enforceable to the fullest extent permitted by law.

14. FORCE MAJEURE:

- 14.1. Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of services or the non-delivery of services as the case may be, under the provisions of this agreement), if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earthquake and other acts of God as well as War, Military operation, Acts or Actions of State Authorities or any other circumstances beyond the control of either Party.
- 14.2. In such circumstances, the time stipulated for the performance of an obligation under the present contract may be extended correspondingly by mutual agreement, for the period of time of action of these circumstances and their consequences. The party for which it becomes impossible to meet obligations under this contract due to Force Majeure conditions, is to notify, in written form, to the other party of the beginning and cessation of the above circumstances immediately, but in any case, not later than 10 (Ten) days from the moment of their beginning.

14.3. If the impossibility of complete or partial performance of an obligation lasts for **more than 2 (two) months**, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of **30 (thirty)** days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

15. COMMUNICATION:

15.1. Any notice, request, demand, approval, consent or other communications provided or permitted hereunder shall be in writing and given by personal delivery, courier or sent by registered post or speed post addressed to the party for which it is intended at its following address:

Contact Person: Director,
Energy Management Centre Kerala
Sreekrishna Nagar, Sreekariyam P.O,
Thiruvananthapuram- 695017

Contact Person:
.....
.....
.....
.....

ANNEXURE B : SCOPE OF SERVICES

1. Submission of DPR comprising of, but not limited to, the following details within 6 months from the date of issue of work order.

- **Introduction**

- Project introduction
- Review and analysis of the available DPR of Madatharuvi SHP located at Pampa basin at Pathanamthitta district currently available with EMC Kerala
- Government policies and incentives offered
- Technical profile of the project
- Costs
- Justification of the project, needs and opportunities of development
- Salient features

- **Project purpose**

- Introduction
- Features of the area
- Power - the key to growth
- Development of hydro potential
- Strategy for expediting hydro development
- Objectives of the scheme
- Justification of the project
- Techno-economic studies to arrive at the best layout considering various alternatives.

- **Infrastructure facilities**

- Location of the project
- Accessibility and roads in the work area
- Availability of labour
- Availability of accommodation
- Availability of electricity
- Availability of communication facilities
- Other services and facilities

- **Surveys and Investigations**

- Remote sensing/GTS studies
- Reconnaissance survey and selection of sites of the various components expected approximately 40 Acres, Cost of surveying to be borne by the consultant.
- Detailed surveys and investigations for preparation of detailed project report
- Hydrological observations and studies
- Geological investigations and mapping
- Topographical survey for locating structures calculations
- Calculation of the catchment area
- FRL of the project and acquisition of land required with land requisition note.

- Forest land required if any
- Reconnaissance report for transmission lines up to nearest KSEB substation
- Survey for fixing weir sites, water conductor system, power house, road etc.

- **Hydrology**
 - Climate - catchment area
 - Precipitation data
 - Stream flow data
 - Comparison of flows
 - Correlation between mean monthly flows
 - Mean monthly and daily flow with 50%, 75% and 90% dependability
 - Design flood discharge
 - Design criteria
 - Approach to flood computation
 - High flood level
 - HFL at weir site
 - HFL at power house site
 - Report on Sedimentation

- **Geology**
 - Regional geography and Geology of the project area
 - Geology at site of various project components
 - Basic Geotechnical characteristics of the terrain

- **Environmental & social impact study - Basic environmental impact & mitigation studies inter-alia;**
 - Assessment and analysis of positive and negative environmental impacts of the proposed project
 - Effects of storage of water
 - Submergence effects of construction
 - Downstream effects due to low or heavy discharge
 - Effects on wild life, fisheries and other aquatic life
 - Loss of flora and fauna, if any
 - Water quality and vectors of diseases
 - Encroachment
 - Selection of project alternatives
 - Measures for mitigation of impact
 - Demography and socio- economic study
 - Rehabilitation and resettlement - strategies and plan.

- **Power potential**
 - Hydrological data
 - Pondage
 - Head

- Discharge utilisation
- Power potential assessment - with 50%, 75% & 90% dependability
- Energy generation
- Cost-benefit consideration
- Installed capacity
- Energy generated, energy available for sale etc.

- **Hydro- mechanical works design and detailing required for;**
 - Preliminary details
 - General
 - Power house and equipment layout
 - Penstock, gearboxes and governors, controls etc.
 - Inlet waves, gates and trash racks, etc.
 - Basic designs
 - Turbine selection and sizing

- **Electro- mechanical works design and detailing required for;**
 - Preliminary details
 - Basic designs
 - Preparation of basic technical specifications
 - Electrical scheme of power station
 - Illumination of power house - transformer switchyard, lighting fixtures and accessories including lighting panels
 - Electrically operated travelling crane (EOT Crane), if required, or else alternate arrangement.
 - Firefighting equipment
 - Power evacuation, power to be transmitted to the nearest KSEB substation
 - Single line diagrams all drawings, specification and description shall conform to international practices.

- **Construction plan and programme**
 - Main components of the project
 - Working period
 - Total period of construction
 - Pre-construction activities

- **Cost, Benefits and Financial aspects**
 - Prepare cost analysis to arrive at an economical and most viable scheme
 - Estimate with rate analysis, BOQ for civil works, hydro-mechanical & electro – mechanical works, transmission/power evacuation
 - Financial data and assumptions
 - Depreciation rate
 - Estimated cost including interest during construction
 - Results of financial analysis

- Contractual frame work and tariff formulation as per regulatory norms.
- Discussion/Advices on financing

- **Drawings in standard layout**

- Index Map
- Location map
- Basin Map & Catchment area Map
- General Layout
- Diversion structure- layout , section & elevation
- Desilting arrangement & Water conductor system – layout L/S + C/S
- Cross drainage – layout
- Surge shaft/Forebay structure - layout, section
- Surplus escape - layout, design criteria, hydraulic design calculations
- Penstock- layout, penstock intake sections, Trash rack elevation
- Power house – Layout, Section
- Tail race – Layout, Section
- Electrical schematic layout
- Switchyard and Grid interface – General layout