



ENERGY MANAGEMENT CENTRE -KERALA
Department of Power, Government of Kerala
Thiruvananthapuram, Kerala - 695 017;
www.keralaenergy.gov.in

REQUEST FOR PROPOSAL

Agency for training of Building Energy Efficiency Expert applicants

Ref. No.: EMC/502/2020-PE(ESS)

Date of Publishing	: - 21st May 2021
Starting date for submission of proposal	: - 21st May 2021
Final date for submission of proposal	: - 4th June 2021

Contents

1. PREAMBLE	3
2. INTRODUCTION	3
3. PROJECT	4
4. SCOPE OF WORK	4
5. DURATION OF PROJECT	5
6. FEE OF PROJECT	6
7. SELECTION PROCESS	6
(A) MINIMUM ELIGIBILITY CRITERIA	6
(B) TECHNICAL EVALUATION PROCESS.....	7
(C) PRELIMINARY SCRUTINY	7
(D) FINANCIAL EVALUATION FOR EMPANELMENT PROCESS.....	8
8. TERMS OF PAYMENT	8
9. CONTENTS OF PROPOSAL	8
10. FORMS FOR THE PROPOSAL	9
FORM 1 : LETTER PROFORMA.....	10
FORM 2 : MINIMUM ELIGIBILITY	12
FORM 3 : ROADMAP & TIMELINE.....	13
FORM 4: DECLARATION LETTER.....	13
FINANCIAL PROPOSAL	14
ANNEXURE A.....	15
ANNEXURE B	17

1. Preamble

This document is a Request for Proposal (RFP) for selection of agency for training of building professionals who are interested to become a Building Energy Efficiency Expert (BEEE) empanelled with EMC Kerala. Empanelment program for Building Energy Efficiency Expert(BEEE) by EMC-Kerala targets at creation of a pool of building professionals in the State of Kerala, who can facilitate implementation of design concepts and other measures for achieving better energy efficiency and conservation in building sector.

Interested bidders may download the RFP document from our website www.keralaenergy.gov.in. The submission of the RFP document must be accompanied with the payment of bid processing fee of Rs. 2000/- (Rupees two thousand only) inclusive of GST. The payment will be accepted in the form of online transaction across the following account or the UPI ID - energymanagementcentre@sbi.

Last Date for Submission of Proposal: 4:00 PM (IST) on 4th May 2021.

Interested bidders may contact Mr. Tomson Sebastian, Energy Technologist-B, EMC-Kerala for any clarification. Tel: 9400068323, Email: tomson@keralaenergy.gov.in

2. Introduction

About EMC-Kerala

Energy Management Centre - Kerala, Department of Power, Government of Kerala is the State Designated Agency (SDA) of Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India to coordinate, enforce and implement Energy Conservation Act-2001 (Central Act 52 of 2002) in Kerala. EMC is working towards attaining energy efficiency in all sectors of economy.

About Building Energy Efficiency Experts (BEEE).

The Energy Conservation Building Code (ECBC) was launched in May 2007 by the Bureau of Energy Efficiency (BEE), Ministry of Power. Its main objective is to establish minimum requirements for energy efficient design and construction of buildings. Recognizing the energy and cost savings of efficient buildings and to help address growing energy needs, Government of Kerala has notified Kerala State Energy Conservation (Building Code) Rules 2017-KSECBC (G.O. (P) No.3/2017/PD dated 11th April 2017 vide Kerala Gazette Vol VI, No. 936 dated 8th May 2017). KSECBC states that, any building or building complex in the state of Kerala that have a connected load of 100kW or greater or a contract demand of 120kVA or greater or having an air conditioned area of 500 m² or above and buildings that are intended to be used for commercial purposes including office buildings except for buildings with residential purpose or warehouse are accounted under the scope of ECBC compliance. Correspondingly, the ECBC clauses has been incorporated in the Kerala Municipality Building Rules (KMBR) vide G.O (P) No. 77/2019/LSGD dated 2/11/2019 and Kerala Panchayat Building Rules (KPBR) vide G.O.(P) No. 78/2019/LSGD dated 2/11/2019. The ECBC stipulates mandatory requirements and prescriptive directives for building components and systems.

The ECBC compliance procedure requires the building to fulfil a set of mandatory provisions related to energy use as well as show compliance with specified requirements stipulated for different building components and systems. The EMC-Kerala, vide the empanelment of BEEE, tries to ensure the availability of building professionals who are capable of doing ECBC compliance check for upcoming buildings in the State. This helps building owners and designers to evaluate the energy performance of a proposed building and make it energy efficient by incorporating necessary measures in the design before the building is constructed.

The Terms of Reference for the empanelment of building professionals in the field of building energy efficiency is published in the official website of EMC-Kerala.

3. Project

The EMC-Kerala has invited applications for empanelment of Building Energy Efficiency Experts through a two stage the training evaluation and subsequent empanelment process creating a cadre of building professionals capable to design energy efficient buildings and give advices on development of energy efficient building projects. The pilot batch of training and empanelment has been completed successfully in 2020-21. From 2021-22 onwards EMC is planning to develop this base of empanelled professionals in a big way to increase its strength to at least 1000 nos. For this proposals are invited from BEE empanelled ECBC firms to organize training programs through online / offline training sessions (as the situation may permit) for the BEEE applicants as per syllabus provided by EMC-Kerala. The applicants/proposers can also associate with architectural colleges in Kerala for organizing the training programs through webinar or classroom training programs. The broad outlay of training programs will be as below.

Sl. No.	Type of training	Duration
1	Training A- Online certificate course on ECBC compliance check through Energy Simulation.	26 hrs
2	Training B - Intensive training on ECBC compliance check	18 hrs

The BEEE applicants who completes Training A successfully shall be allowed to participate in the Training B. The minimum number of participants expected in the each training programme is 30 and at the maximum 50. The agency has to ensure that at least 75% of the participants are residents in Kerala or working in the State of Kerala.

4. Scope of Work

1. Create awareness on BEEE empanelment programme across the building professionals especially in Kerala and ensure maximum participation in the programme

2. Organize training programmes for BEEE applicants across Kerala. It can be through online / off-line mode based on the requirements of applicants. The agency can organize training programmes in co-ordination with the associations/ organizations in the building sector, if there are sufficient number of BEEE applicants from that associations/ organizations.
3. The training sessions have to be handled by the ECBC master trainers/ Building energy simulation experts listed by EMC-Kerala.
4. EMC shall provide the training material and training content and the training session has to be done based on the same.
5. The agency is expected to prepare model questionnaire / problems, in concurrence with EMC-Kerala, for carrying out evaluation process of BEEE applicants.
6. The agency shall submit the simulation outputs and supporting documents from candidates in the prescribed format for the evaluation exercise to EMC-Kerala.
7. The expert team constituted by EMC-Kerala will do the evaluation of the outputs forwarded by the agency from trainees. A representative from the training agency should be there in the expert team for evaluation.
8. After evaluation of submissions and publishing of the results by EMC-Kerala, the agency shall facilitate in preparation of certificates in prescribed format for the participants. The soft copy of the certificate shall be forwarded to EMC for issue.

5. Duration of project

The target number of BEEE to be created by individual agency shall be fixed by EMC before starting the first program. Project duration will be 6 months from the date of issuance of work order to the agency within which time the agency may conduct maximum number of training and evaluation processes to achieve the target. The duration may be extended by EMC-Kerala if required, based on the performance of the agency, for which the cost structure may vary.

6. Fee of Project

Training fee per applicant has to be quoted by the interested and eligible agencies for undertaking training of BEEE applicants. Fees should be inclusive of all expenses.

Sl. No.	Type of training	Duration	Maximum limit of training fee/ Participant
1	Training A- Online certificate course on ECBC compliance check through Energy Simulation.	26 hrs	2000
2	Training B - Intensive training on ECBC compliance check	18 hrs	3000

**The details of Training A and Training B is attached as annexure A and annexure B

EMC will provide an additional remuneration to the agency at a rate of Rs.1000 per trainee who successfully complete the empanelment process and become a BEEE professional empanelled with EMC under the aegis of the respective agency. This remuneration is provided to encourage the agency to produce maximum numbers of BEEEs through this programme.

7. SELECTION PROCESS

(A) Minimum Eligibility Criteria

1. The training agency must be an ECBC expert firm empanelled by BEE.
2. Should have at least two employees who can communicate in local language (Malayalam) for event coordination. If the agency is associated with architectural institutes in Kerala, the employees of that institute may be considered for the same, subject to submission of an authorization letter from that institute.
3. Should have organized at least 10 ECBC training programs, where at least 5 programs have to be in the form of webinar.
4. Should have checked the ECBC compliance of atleast 10 building projects
5. Should not be involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract.
6. Should not be blacklisted by any Central/ State Government / Public Sector undertaking.
7. Any other additional information that the interested bidder believes is relevant to expressing their interest in and commitment to the Project.

(B) Technical Evaluation Process

	Requirement	Years of experience	Maximum Marks allotted
1.	Experience of organizing ECBC training programs at least 10 programs (At least 5 programs have to be webinar) a. 10 programs b. 20 programs c. 30 programs or more	At least 10 programs	15 maximum 5 10 15
2.	Experience of at least 10 projects in providing consultancy for ECBC compliance check a. 10 projects b. 20 projects c. 30 projects a. 40 projects or more		20 maximum a) 6 b) 10 c) 14 d) 20
3	Roadmap with timelines		15
	TOTAL		50 marks

(C) Preliminary Scrutiny

Preliminary scrutiny of the Proposals will be made to determine whether they are complete, whether the documents have been properly signed, whether the forms are generally in order (As per clause of this RfP), and whether the minimum eligibility criterion is met (as per clause of this RfP). Proposals not conforming to above listed preliminary requirements will be prima facie rejected. Bids qualified in preliminary scrutiny shall be eligible for technical evaluation.

The agency scoring 70 % and more (35 and more marks) in technical evaluation {refer 7(B) of this RfP} shall be eligible for financial evaluation. The rectifiable discrepancies in the Proposal, if any would have to be corrected by the interested agency within a period of seven (7) days of the intimation given to them during the preliminary scrutiny of proposals.

(D) Financial evaluation for Empanellment Process

The interested organisation which fulfils all the criteria as mentioned in Preliminary scrutiny clause will be eligible to be considered by EMC for their submitted technical proposal and then the proposed training amount. The organisation should take enough care to submit all the information sought by the Authority in the desired formats. The Proposals are liable to be rejected if information is not provided in the desired formats.

All the proposed amount by all the interested agency shall be studied and analysed by EMC-Kerala. The first preference will be given to the agency which shall be quoting the lowest training fee. Agencies quoting L1 figure shall be empanelled for this programme and one chance shall be given to other agencies too for meeting the L1 cost. Other interested agencies shall be empanelled if they agree to meet the lowest identified training cost.

8. Terms of Payment

Payment authority will be Energy Management Centre- Kerala. The successful bidder shall raise the invoice in favour of "The Director, Energy Management Centre -Kerala, Sreekrishna Nagar, Sreekaryam P.O. Thiruvananthapuram - 695 017".

9. Contents of Proposal

The proposals would be scrutinized on the basis of the criterion set in para 6.3 above.

The specific experience of the Agency would be checked on the basis of the following information provided in ENVELOPE-A along with the prescribed documents:

- I. Evidence of satisfying all the minimum eligibility criterion listed out in clause 7(A) of this RfP
- II. Evidence of having successfully carried out ECBC training programs
- III. Evidence of having successfully carried out ECBC compliance check of projects.
- IV. Roadmap with time lines
- V. Sufficient size, organization, and management to carry out the entire project.
- VI. Specialized skills and creativity related to the project.

However, EMC-Kerala in its sole/ absolute discretion can apply whatever criteria deemed appropriate in determining the responsiveness of the Proposal submitted by the respondents.

ENVELOPE-B i.e. price bid will be opened only for bidders who have been found successful in meeting the preliminary scrutiny criterion with all required information furnished in ENVELOPE-A.

10. Forms for the Proposal

Proposal is to be submitted in the following format along with the necessary documents as listed. The Proposal shall be liable for rejection in the absence of requisite supporting documents. Proposal should provide information against each of the applicable requirements. In absence of the same, the Proposal shall be liable for rejection.

Form 1 : Letter Proforma

To
The Director,
Energy Management Centre - Kerala
Sreekrishna Nagar, Sreekaryam P.O.
Thiruvananthapuram - 695 017

Sub: Empanelment of training agencies to fix up cost for training of BEEE applicants

Sir,

The undersigned Agency, having read and examined in detail all the RfP documents in respect of appointment of an Agency for EMC-Kerala for the said project, do hereby express their interest to provide their Services as specified in the scope of work

2. Correspondence Details

1	Name of the Agency*	
2	Address of the Agency*	
3	Name of the contact person to whom all references shall be made regarding this empanelment*	
4	Designation of the person to whom all references shall be made regarding this tender*	
5	Address of the person to whom all references shall be made regarding this tender*	
6	Mobile * Telephone (with STD code)	
7	E-Mail of the contact person*	
8	Fax No. (with STD code)	

3. Document forming part of Proposal We have enclosed the following:

Form 2 : Minimum Eligibility

Form 3 : Roadmap and timeline

Form 4: Declaration form

Financial proposal

Bid processing fee

Registered Power of Attorney executed by the Agency in favor of the Principal Officer or the duly Authorized Representative, certifying him/her as an authorized signatory for the purpose of this RFP.

4. We hereby declare that our Proposal is made in good faith and the information contained is true and correct to the best of our knowledge and belief.

Thanking you,

Yours faithfully,

(Signature of the Officer)

Form 2 : Minimum eligibility

Sl. No.	Criteria	Yes/No
1	Is the firm is an ECBC expert firm empanelled by BEE *	
2	Is the firm is have at least two employee who can communicate in local language (Malayalam) for event coordination**	
3	Is the firm have organized at least 10 ECBC training programs***	
4	Is the firm have checked the ECBC compliance of at least 10 building projects****	

* Attach the ECBC expert firm certificate from BEE

** Fill the following table

Local Language (Malayalam) expertise

Sl. No.	Name of the employee	Speak	Read	Write

*** Enclose the list of training programs conducted along with the training reports

**** Enclose the list of building projects along with ECBC compliance reports/ work completion certificate

Signature

(Name of the officer)

Form 3 : Roadmap & Timeline

- A) Roadmap
- B) Training agenda with timeline

Form 4: Declaration Letter

Declaration Letter on official letter head stating the following:

We are not involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract.

We are not black-listed by any Central / State Government / Public Sector Undertaking in India.

Signature

(Name of the officer)

Financial Proposal

The Director,
Energy Management Centre - Kerala
Sreekrishna Nagar, Sreekaryam P.O.
Thiruvananthapuram - 695 017

Sub: empanelment of training agencies to fix up cost for training of BEEE applicants

Sir,

In response to the above mentioned subject, hereunder is our financial cost for doing the training of BEEE applicants:

I/we services firm herewith enclose Financial Offer as follows for empanelling for undertaking training of BEEE applicants.

Sl. No.	Type of training	Offered Training fee/ Participant(Rs.)
1	Training A- Online certificate course on ECBC compliance check through Energy Simulation.	
2	Training B - Intensive training on ECBC compliance check	
	Total	

Above mentioned cost include all logistics and no other extra charges are applicable except GST, which is extra as applicable by Government of India.

We hereby declare that our Proposal is made in good faith and the information contained is true and correct to the best of our knowledge and belief.

Thanking you,

Yours faithfully (Signature of the Officer)

Name :

Designation :

Seal :

Place

Date

Annexure A

<u>Online Certificate Course on ECBC compliance check through Energy Simulation</u>		
Session no.	Session title	Duration(mins)
1	1.1 ECBC- A Brief on ECBC and Kerala State ECBC Rules 2017	30
	1.2 Understanding Building Physics	60
2	2.1 Introduction on ECBC & Compliance Approach <ul style="list-style-type: none">• Mandatory Requirements• Prescriptive Approach• Whole Building Performance Approach	45
	2.2 Case Study ECBC Compliant Building with Cost Analysis	60
3	3.1 Technical Aspects of ECBC	30
	3.2 Building Physics, U-Value Calculation	45
	3.3 Building Design, Form, Zoning & Orientation Optimization	45
4	4.1 Daylighting Analysis - Shading, Daylighting, Glass Selection	60
	4.2 Case Study - Presentation	30
5	5.1 Introduction to Energy Modelling	45
	5.2 Demonstrations on Tools Interface	45
	5.3 Presentation of Case Study	30
6	6.1 Hands-on Training for Sample Energy Model: <ul style="list-style-type: none">• Building Geometry Development	90
7	7.1 Optimization of Building Envelope (<i>Zoning, Insulation, Shading Devices, and their Impact on Building Energy-Load Calculation</i>)	45
	7.2 HVAC System Sizing	45
8	8.1 Modelling of Different Systems	60
	8.2 Simulation of Developed Model	30
9	9.1 Simulation-Output Analysis	90
10	10.1 Hands-on Training Exercise Problem <ul style="list-style-type: none">• Base case modelling as per KSECBC Rules (ECBC 2007 Guide) - Notified in the State	90
11	11.1 Hands-on Training Exercise Problem Proposed Case as per Sample Exercise Shared	90

	<ul style="list-style-type: none"> Proposed Case Modelling as per the exercise given. 	
12	12.1 Hands-on Training- Exercise Problem EPI evaluation and comparison of Base Case and Proposed Case Models-(Specific Building Type from the Code)	90
<u>EXAMINATION</u>		
1	ECBC Examination for Participants - Multiple Choice Questions type.	60
2	Simulation Examination for a sample energy model of typical building type- With the Building Descriptions shared with participants	300
	Total course duration	26 Hrs

Annexure B

Intensive training on ECBC compliance check	
MODULES	DURATION
Module 1	
ECBC Awareness & Overview	
World Energy Scenario & Energy scenario in India	15
About ECO-III Project, Milestones, EC Act,	10
Introduction to ECBC	15
Impact of ECBC Compliance	10
Q & A Session	10
Total Duration (Minutes)	60
Total Hours	1hr.
Module 2	
ECBC Scope & Administration	
ECBC Scope, Applicability	10
ECBC Compliance approach KSECBC Rules 2017	10
ECBC Compliance Process in Kerala	15
Administration and Enforcement	10
ECBC Documents in force	15
Q & A Session	10
Total Duration (Minutes)	70
Total Hours	1.2hrs.
Assignment: ECBC Compliance check building permit documentation	
Module 3	
Envelope Design Considerations	
Design & details of opaque construction, Fenestration, Shading devise, cool roofs	30
Heat transfer principles - Material Properties - Moisture & Infiltration - Design methods Calculations	30
Code requirements - Mandatory & Prescriptive- ECBC Compliance forms	15
Q & A Session	15
Total Duration (Minutes)	90
Total Hours	1.5 hrs.
Assignment: Calculation of thermal property of Construction materials /U-Value calculation for a sample building	
Module 4	
Heating Ventilation & Air-Conditioning - basics ECBC	
Whole building design approach and role of HVAC	15
Refrigerative cooling, system types and details	25
HVAC System components & Efficiency	25

Cooling load reduction	15
System Balancing & Building Commissioning overview	10
Mandatory & Prescriptive- ECBC Compliance forms	15
Q & A Session	15
Total Duration (Minutes)	120
Total Hours	2hrs.
Assignment: HVAC modelling in Simulation tool for a sample system	
Module 5	
Lighting Basics	
Lighting Principles, Light Quality optimisation	20
Energy Efficient Lighting Systems	15
Lighting control design, BAM, SFM	15
Whole building approach, Concept of LPD	10
Mandatory & Prescriptive -ECBC Compliance forms	15
Q & A Session	15
Total Duration (Minutes)	90
Total Hours	1.5hrs.
Assignment: LPD calculations (Manual and Simulation tool based)	
Module 6	
Daylighting Analysis	
Significance of Daylighting Analysis, DEF, Surface Reflectance, UDI Code Requirements	20
Daylighting Analysis Simulation Method	55
Q & A Session	15
Total Duration (Minutes)	90
Total Hours	1.5 hrs.
Assignment: Daylighting factor calculation (based on Prescribed ECBC Methods)	
Module 7	
Electrical Power	
Power Distribution, Transformers, Electric Motors	10
Types- selection criteria- Sizing	10
Losses- PF & PFC- Efficiency	10
Mandatory & Prescriptive- ECBC Compliance forms	10
Service Hot Water & Pumping - basics	
Types of water heaters - Source type and system details	10
Solar water heater sizing- Efficiency- Supplementary water heating	10
Energy loss- piping Insulation- heat traps	10
Mandatory & Prescriptive- ECBC Compliance forms	10
Q & A Session	10

Total Duration (Minutes)	90
Total Hours	1.5hrs
Assignment: Modelling Service hot water systems in simulation tool (for a sample building)	
Module 8	
Hands-on Compliance Check	
Prescriptive requirements	50
Trade- off compliance	30
Q & A Session	15
Total Duration (Minutes)	95
Total Hours	1.5hrs.
Assignment: Prescriptive analysis method for a hypothetical project	
Module 9	
Hands-on Compliance Check	
Whole Building Performance using software	150
Q & A Session	60
Total Duration (Minutes)	210
Total Hours	3.25hrs.
Assignment: Whole building analysis method for a sample project	
Module 10	
Report Generation & Assessments	
Guidance on Report Generation as per the ECBC	30
Assessment on ECBC Compliance	30
Total Duration (Minutes)	60
Total Hours	1hrs.
Assignment: Report generation for a Pre-modelled sample project.	
Total Course Duration	960 hrs
Total Course Duration in Hours	16 hrs.