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TERMS OF REFERENCE (TOR)

Empanelment of Professionals in Building Energy Efficiency in Kerala

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

Date of Publishing :- 17th May 2021

Date of 5th revision :- 5th June 2026

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1. Abstract

As the building sector continues to emerge as a major contributor to energy consumption and environmental impact, improving energy efficiency and sustainability in buildings has become a national and state-level priority. The Government of India, through the Energy Conservation Act, 2001 and its subsequent amendments, including the Energy Conservation (Amendment) Act, 2022, has strengthened the regulatory framework for promoting energy-efficient and sustainable buildings across the country. In line with these national objectives, the Bureau of Energy Efficiency (BEE) developed the Energy Conservation and Sustainable Building Code (ECSBC), prescribing minimum energy performance and sustainability standards for commercial buildings.

Kerala has witnessed rapid urbanisation and significant growth in infrastructure and commercial building development over the past two decades, leading to a substantial increase in energy demand. Recognising the need to mainstream energy efficiency in the building sector, the Government of Kerala has notified the Kerala Energy Conservation and Sustainable Building Code Rules, 2025, and integrated the ECSBC provisions into the Kerala Municipality and Panchayat Building Rules through the Building (Amendment) Rules, 2025. This has enabled the mandatory implementation of ECSBC requirements for applicable commercial buildings and facilitated integration of energy efficiency compliance within the statutory building permit approval process.

Prior to the notification of ECSBC, the State implemented building energy efficiency initiatives through the Kerala State Energy Conservation (Building Code) Rules, 2017, supported by a framework for empanelment of technical professionals. With the expanded scope and statutory integration of ECSBC, there is a need to strengthen the institutional and technical support mechanisms required for effective implementation, compliance verification, and coordination among stakeholders.

In this context, the Energy Management Centre-Kerala, functioning as the State Designated Agency under the Energy Conservation Act, has established a structured framework for the qualification, certification, and empanelment of Building Energy Efficiency Experts (BEEE). The empanelment initiative aims to create a technically competent and accountable pool of professionals capable of supporting ECSBC implementation, assisting project proponents and local authorities, and ensuring consistency, technical rigour, and professional integrity in the enforcement of sustainable building practices across the State of Kerala.

2. Introduction

The Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India, introduced the Energy Conservation Building Code (ECBC) in 2007 to establish minimum energy efficiency standards for buildings. In line with this, the Government of Kerala notified the Kerala State Energy Conservation (Building Code) Rules, 2017, mandating ECBC compliance for specified commercial buildings with connected load of 100 kW or above, contract demand of 120 kVA or above, or air-conditioned area of 500 m² or more. The ECBC provisions were later incorporated into the Kerala Municipality Building Rules and Kerala Panchayat Building Rules in 2019, enabling integration of

energy efficiency requirements into the statutory building approval process.

Building upon the earlier ECBC framework and in line with the amendments to the Energy Conservation Act, the Bureau of Energy Efficiency (BEE) developed the Energy Conservation and Sustainable Building Code (ECSBC) to prescribe minimum energy performance and sustainability standards for commercial buildings. In line with this, the Government of Kerala notified the Kerala Energy Conservation and Sustainable Building Code Rules, 2025 vide G.O. (P) No. 5/2025/Power dated 10.03.2025, published as S.R.O. No. 374/2025 in the Kerala Gazette dated 01.04.2025, making Kerala the first State in the country to establish dedicated rules for the implementation of ECSBC.

To facilitate statutory implementation of the ECSBC framework, the provisions of the Rules were subsequently incorporated into the Kerala Municipality Building Rules and Kerala Panchayat Building Rules through the Kerala Municipality Building (Amendment) Rules, 2025 vide G.O. (P) No. 53/2025/LSGD dated 29.10.2025 [S.R.O. No. 1240/2025] and the Kerala Panchayat Building (Amendment) Rules, 2025 vide G.O. (P) No. 54/2025/LSGD dated 29.10.2025 [S.R.O. No. 1241/2025]. These amendments enabled the integration of ECSBC compliance into the statutory building permit and approval process across the State.

The Kerala ECSBC Rules, 2025 are applicable to commercial buildings having a connected load of 100 kW or above or a contract demand of 120 kVA or above. The Rules encompass comprehensive provisions related to building envelope performance, energy-efficient heating, ventilation and air-conditioning (HVAC) systems, lighting efficiency, renewable energy integration, sustainable site planning, water conservation, waste management, and indoor environmental quality. The implementation of these Rules is expected to significantly strengthen sustainable and energy-efficient building practices in Kerala and contribute towards the State's long-term energy conservation, environmental sustainability, and climate resilience objectives.

3. Objectives

1. The EMC-Kerala, vide the empanelment of Building Energy Simulation Expert (BESE), Provisional Building Energy Efficiency Expert (PBEEE) and Building Energy Efficiency Expert (BEEE) creates a special cadre of building professionals who would help building owners, architectural firm, builders & consultants to design ECSBC/ECBC compliant building incorporating necessary energy conservation measures in the design before the building is constructed.

2. The EMC-Kerala, vide the empanelment of BEEE, also ensures availability of building professionals who are capable of doing ECSBC/ECBC compliance check for upcoming buildings in the State till Certified Energy Auditors (Building) is notified by BEE.

3. EMC has initiated the process of empanelment of firms for Energy Efficient Buildings. Empanelment of firms in Building Energy Efficiency targets at creation of a pool of certified firms in the State of Kerala, to implement the concepts and actions of energy efficiency and conservation in building sector. In this empanelment process there is a mandatory provision for a prescribed number of BEEEs, PBEEEs and BESE available with

firms. (For more details, https://keralaenergy.gov.in/files/pdf2022/EMC_Empanellled_Firms_for_EE_Buildings_guidelines_-_TOR.pdf)

4. Category of empanelment

1. Building Energy Simulation Expert (BESE)

- Engineers, Architects and Engineering Diploma holders can apply for this empanelment.
- The final year Engineering & Architecture students also can apply for this empanelment and the empanelment shall be coming into exist only after successful completion of the degree course.
- The applicant has to clear the examination conducted as part of the Training A (A Detailed Course on ECSBC Compliance Check Framework) conducted by EMC-Kerala

2. Provisional Building Energy Efficiency Expert (PBEEE)

- Engineers, Architects and Engineering Diploma holders with *BESE* empanelment can apply for this empanelment.
- The applicant has to clear the examination as part of Training B (Intensive training on ECSBC compliance check & procedures) conducted by EMC-Kerala.

3. Building Energy Efficiency Expert

- Engineers, Architects and Engineering Diploma holders with *BESE* empanelment having minimum 2 years of relevant work experience in buildings sector or energy sector or professional teaching experience can apply for this empanelment. The applicant has to clear the examination as part of Training B (Intensive training on ECSBC compliance check) conducted by EMC-Kerala followed by the personal interview.

  Note: Green building professionals holding credentials such as LEED-AP, IGBC-AP, GRIHA-Evaluator, GRIHA-CP, or EDGE Expert are exempt from attending Training A. However, this exemption does not apply to Training B; these professionals are still required to attend Training B and successfully pass the subsequent online examination..

- Professionals with Provisional Building Energy Efficiency Expert (PBEEE) certification also can apply for this empanelment after attaining sufficient experience in the field of building energy efficiency. The applicant has to involve in ECSBC compliance check of at least 5 building projects / involve in design of ECSBC compliant buildings and required to submit the certificate in the prescribed format.

5. Expected Outcome

Creation of sufficient number of experts, in such a way that the requirements expected in the state for sustainable building design can be met. The empanelled professionals can also take up the requirements expected once the Eco Niwas Samhita (ECSBC-Residential) is mainstreamed in the state.

6. Benefits to empanelled professionals

- Publication of list of empanelled professionals in the Energy Management Centre-Kerala online-portal to help professional development.
- A wide knowledge among the builders about empanelled professionals through the publication
- Encouragement of professionals to initiate services on sustainable building design as a career
- Readily available contact details of BEEE, PBEEE and BESE to help the customers to identify the best and proximate location of professional.
- Rewarding BEEE by giving recognition for the selected professionals for active participation & providing committed services for multiple projects, for ECSBC compliance probably through a Kerala State Energy Conservation Awards (to be decided by monitoring committee).

7. Empanelment Process

- Interested professionals can apply for this empanelment according to their eligibility as per para 4.
- The application for empanelment has to be submitted to EMC-Kerala through the registration link provided on EMC website. The empanelment fee (Inclusive of training fee) have to be remitted to EMC-Kerala and the payment details need to be submitted to EMC-Kerala at the time of registration. The application fee for empanelment is as follows.

Sl. No.	Category of empanelment	Empanelment fee* (Exclusive of GST) INR
1	*Building Energy Simulation Expert (BESE)*	• 7500 for professionals • 5000 for students
2	*Provisional Building Energy Efficiency Expert (PBEEE)*	15000**
3	*Building Energy Efficiency Expert (BEEE)*	15000**

* The empanelment fee is non-refundable. Those participants who wish to attend the training A only to start with, may remit the training fee (Rs. 4000/2500 for professionals/students plus applicable GST) and get trained and will be provided an opportunity to pay the remaining if they intend to attend the evaluation process and get certified as a BESE. Those participants who wish to attend the training B only to start, may remit the training fee (Rs. 7500 plus applicable GST) and get trained and will be provided an opportunity to pay the remaining if they intend to attend the evaluation process and get certified as a PBEEE /BEEE.

For those applicants who would like to get empanelled without attending the training as part of empanelment, the application fee for empanelment is as follows.

Sl. No.	Category of empanelment	Empanelment fee (Exclusive of GST) INR
1	*Building Energy Simulation Expert (BESE)*	5000

2	*Provisional Building Energy Efficiency Expert (PBEEE)*	10000
3	*Building Energy Efficiency Expert (BEEE)*	10000

It is mandatory that all the applicants shall clear the examination conducted as part of the empanelment process, even if the applicants are not attending the training part.

** The BESE empanelled professionals need to remit Rs. 15000 + applicable GST for the PBEEE and BEEE empanelment.

- The building professionals meet the qualification criteria as per para. 4, who want to get empanelled by EMC can attend the BEEE training organised by EMC.
- The training programs as part of the empanelment process are also conducted by the training agencies and institutes empanelled with EMC-Kerala.
- At the end of the each training programme, the applicant has to clear the online qualification test including topics related to ECBC/ECSBC in Kerala Municipality Building Rules & Kerala Panchayat Building Rules & Comprehensive ECSBC Compliance Check procedures, conducted by EMC.
- Failing to clear the above test, the applicant can attend for a re-test and get qualified by the EMC on payment of requisite fee, Rs. 3000+ applicable GST and maximum of only 'two' re-test can be availed to the applicant.
- Applicants requesting re-evaluation of their examination submissions may do so by paying the required fee of Rs. 2000 + applicable GST.
- The details of training A and Training B is attached as annexure.

8. Other details

- The applicant is expected to furnish all the details mentioned in the selection criteria clauses and submit the copy along with the application.
- Original certificates are to be provided for verification by applicants at the time of interview. Applicants failing to submit the said documents will not be considered for the evaluation.
- Confirmation towards Empanelment will entirely be at the discretion of EMC- Kerala.
- Empanelment of BEEE is for a period of 2 years and the applicant has to renew the empanelment after the expiry of tenure.
- Those applicants who are intended to renew their empanelment shall submit their application to EMC through the online form (https://forms.gle/WrJiXH56feBMPMH69).
- The renewal of the empanelment shall be for a period of 2 years and the renewal fee is Rs. 590/- (Inclusive of GST)

9. Conclusion

The proposal of empanelment of building professionals, is to ensure the availability of ECSBC/ECBC Technical Assistance to every locations of the State of Kerala - at least one professional in all 140 constituencies of the State, including sufficient availability in Municipalities and Corporations. This empanelment ensures a decentralised service support of professional expertise in the field of energy efficiency throughout the State and to reduce the energy demand projected by the building sector

10. Annexure-A

Training A : DETAILED COURSE ON ECSBC COMPLIANCE CHECK FRAMEWORK

Sl. No.	Session Title	Coverage	Duration (Hrs)
1	Regulatory and Institutional Framework	• Energy Conservation Act, 2001; • EC Amendment Act, 2022; • ECSBC 2024 structure; • Kerala ECSBC Rules, 2025; • Role of The Energy Management Centre-Kerala; • Linkage with KMBR & KPBR Amendments; • Role of BEEE	1
2	ECSBC Applicability and Compliance Architecture	• Applicability thresholds; • Building classification; • Compliance levels (ECSBC, ECSBC+, Super ECSBC); • Compliance approaches; • Stage-wise compliance	1
3	Sustainable Sites and Planning	• Site planning provisions; • Non-roof heat island reduction; • Landscape and mobility provisions	1
4	Building Envelope - Thermal Performance	• Envelope requirements; • Walls, roofs, fenestration, shading; • Extraction of envelope parameters from drawings	2
5	Daylighting Compliance (Mandatory)	• Daylighting provisions; • Minimum daylight availability; • Manual calculation; • Simulation-based assessment	4
6	Comfort Systems and Controls	• Ventilation and space conditioning provisions; • HVAC efficiency; • Controls; • Interpretation of datasheets	2
7	Lighting Systems and Controls	• Interior and exterior lighting requirements; • LPD; • Lighting controls; • Daylight integration	1
8	Electrical Systems and Metering	• Electrical efficiency provisions; • Metering and sub-metering; • Monitoring requirements	1
9	Renewable Energy Systems	• Renewable Energy Generation Zone requirements; • Minimum contribution thresholds; • Roof feasibility	1
10	Water Management and Controls	• Water efficiency provisions; • Water balance; • Rainwater harvesting; • Wastewater reuse	2
11	Waste Management	• Construction and operational waste provisions; • Waste segregation; • Area calculations	1

12	Indoor Environmental Quality	• Indoor air quality; • Thermal comfort; • Visual comfort provisions	1
13	Whole Building Performance - Energy Simulation	• EPI concept; • Baseline and proposed building definition; • Simulation workflow	6
14	ECSBC Forms and Compliance Workflow	• Forms under Kerala ECSBC Rules, 2025; • Permit, during construction and completion stages	2
Total training duration			**26 hours**

Examination

The BESE qualification examination will have two parts

1. Multiple Choice Question examination
2. Detailed ECSBC compliance check on a hypothetical commercial building project

Training B : INTENSIVE TRAINING ON ECSBC COMPLIANCE CHECK & PROCEDURES

Sl. No.	Session Title	Coverage	Duration (Hrs)
1	Advanced ECSBC Interpretation and Professional Practice	Interpretation of complex ECSBC provisions; professional responsibilities of BEEEs; coordination with design teams; conducting ECSBC design charrettes	1
2	Advanced Daylight Simulation	Detailed daylight simulation using the hypothetical project; daylight optimisation strategies; glare control; interpretation of daylight metrics	2
3	Advanced Whole Building Energy Simulation	Whole building energy modelling with complex HVAC systems; operational schedules; baseline and proposed case modelling; optimisation strategies	4
4	Integrated Design Complexity	Managing conflicts between envelope, daylighting, HVAC and lighting systems; resolving design trade-offs for compliance	2
5	Construction-Stage Compliance Management	Managing ECSBC compliance during construction; identifying deviations; documentation of site compliance; record maintenance	1
6	Operational Monitoring and Performance Verification	Metering and sub-metering architecture; EMS/BMS integration; preparation for EPI reporting; operational monitoring strategies	1
7	ECSBC Documentation and Statutory Coordination	Preparation of ECSBC compliance documentation; interpretation of Kerala ECSBC Rules forms; coordination with LSGD, KSEI and EMC-Kerala	3
8	Digital Compliance Platforms and Record	Digital compliance processes through the ECSBC compliance verification portal of The Energy	1

	Management	Management Centre-Kerala; record management protocols	
Total training duration			**15 hours**

Examination

The BEEE examination shall be conducted through a **comprehensive hypothetical commercial building project** representing realistic design, construction and operational scenarios.

Candidates shall demonstrate the ability to:

- Interpret architectural, electrical, HVAC and other project drawings
- Interpret system technical specifications and operational schedules
- Apply ECSBC provisions across all applicable chapters
- Conduct daylight simulation and whole building energy simulation
- Prepare complete ECSBC compliance documentation
- Develop compliance monitoring strategies for construction and operation stages