

Model Expression of Interest

for Empanelment of Agencies for Construction of
Houses/Buildings using Alternate Technologies on
Design and Built Basis



Ministry of Housing & Urban Poverty Alleviation
Government of India

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Houses/Buildings using Alternate Technologies on
Design and Built Basis



Ministry of Housing & Urban Poverty Alleviation
Government of India



M. VENKAIAH NAIDU

Minister of Housing and Urban Poverty Alleviation,
Urban Development and Parliamentary Affairs
Government of India



Message

Government of India has launched the Pradhan Mantri Awas Yojana “Housing for All” (Urban) Mission with the objective of providing 20 million houses to urban poor including slum dwellers by the year 2022 when the Nation completes 75 year of independence. To achieve this ambitious goal, concerted efforts would be required by all stakeholders. Ministry of Housing and Urban Poverty Alleviation is already working in a pro-active mode through continuous interactions with State Governments for smooth and effective implementation of the mission.

The Government is aware that conventional system of brick and mortar construction are not sufficient to achieve the target. New and emerging fast track technologies must be explored to ensure speed, quality, environment friendliness and economy in construction. Building Materials and Technology Promotion Council (BMTPC) under the guidance of the ‘Housing for All’ Mission Directorate has identified few alternate emerging precast/prefab technologies which are faster and can deliver desirable quality and durability. Apart from these technologies, there are other upcoming technologies also which could be applicable in mass housing.

Past experience has shown that there are some apprehensions in adopting new technologies for various reasons. Keeping this in mind, BMTPC in consultation with the Mission Directorate has prepared Guidelines and Model Eoi (Expression of Interest) which can be used by State Government agencies and other organizations to empanel new technologies for their housing projects.

I hope that State Governments would use this as a resource and reference document for identification of new technologies and implementation of the same in their mass housing projects.

I appreciate the efforts being put in by BMTPC under the guidance of Ministry of Housing & Urban Poverty Alleviation for taking such initiatives to facilitate adoption of new technologies and ultimately contributing towards achieving the goal of “Housing for All”.


(M. Venkaiah Naidu)



BABUL SUPRIYO

Minister of State for Housing & Urban Poverty Alleviation
and Urban Development
Government of India




Message

Conventional building materials & construction technologies are no longer found sufficient for construction of buildings / houses in many parts of the country due to various factors like shortage of basic materials, rising cost, shortage of labour in urban areas, environmental issues, etc. Many types of alternate emerging technologies and materials have been developed across the world and are in use for construction of houses. Some of these have been found to be suitable for Indian conditions also. Building Materials & Technology Promotion Council (BMTPC) has also already evaluated and recommended few such technologies for mass housing. It is required to introduce them in actual housing projects in the country.

With massive construction activities likely to be initiated in housing sector under “Housing for All” Mission of the Central Government, it is necessary to streamline the process of selection of emerging technologies.

The “Guidelines for Empanelment of Agencies for Construction of Housing / Buildings using Alternate Technologies on Design and Built Basis” & “Model Expression of Interest” for Alternate Building Technologies, prepared by BMTPC in consultation with HFA Mission Directorate are good initiatives to promote new emerging technologies.

I hope that State Governments would take full advantage of the two documents while implementing projects with emerging technologies.



(Babul Supriyo)



DR. NANDITA CHATTERJEE

Secretary

Ministry of Housing & Urban Poverty Alleviation
Government of India



Message

The Ministry of Housing and Urban Poverty Alleviation, through the Pradhan Mantri Awas Yojana / "Housing for All" (Urban) mission, launched on 25th June, 2015 intends to address the housing shortage in the country, estimated at about 2 crore houses by 2022.

Recognizing that there was a need to look for new, emerging, environment friendly, cost effective and speedy construction practices under the mission, a Technology -Sub Mission has been set up to facilitate adoption of modern, innovative and green technologies as well as building material for faster and quality construction of houses.

Eight such new emerging Technologies have already been studied and recommended by Building Materials & Technology Promotion Council. Few other technologies are also seen as having potential for mass scale housing. Actual field level application of these technologies, however, calls for a different approach from the normal practice of procurement based on Scheduled Rates of PWDs.

Hence, the need to develop a model for selection of new emerging technologies and agencies has been emphasized by State Governments in many discussion fora and, in this context, "The Model Expression of Interest for Empanelment of Agencies for construction of houses / building using Alternate Technologies on Design and Built Basis", prepared by BMTPC in consultation with 'Housing for All' Mission Directorate and State Governments, is a commendable effort.

I hope State Governments and their concerned housing agencies will find the documents useful while implementing new emerging technologies in their upcoming projects towards the "Housing for All" (Urban) mission.

(N Chatterjee)

Place: New Delhi

Dated: September 28, 2015



SANJEEV KUMAR

Joint Secretary & Mission Director (Housing for All)
Ministry of Housing & Urban Poverty Alleviation
Government of India



Foreword

The Ministry of Housing and Urban Poverty Alleviation has launched the Pradhan Mantri Awas Yojana "Housing for All"(urban) mission, under which the Central Government would be assisting the State Government in providing a pucca house to all eligible beneficiaries among the urban poor. The Mission is giving due attention to quality, speed, durability of construction etc. Introduction of fast track environmental friendly, cost effective and sustainable alternate technologies in housing sector is need of the hour.

The process of bringing any technology to field application involves many steps, which are required to be addressed appropriately. Apart from establishing the technical suitability of any technology, there are operational bottlenecks which require attention. The conventional systems are well documented with Work Specification and Schedule of Rates by Public Works Departments. Alternate emerging technologies, using different materials and construction methodologies, lack such standardized documentation.

State Governments and various stake holders, during various interactions, have emphasized the need to develop a model tender document for selection of agencies for technology neutral construction of houses.

Considering various options, it was felt that the State Government could consider prequalifying/empanelment of alternate technology providers using technical and functional parameters in different capabilities depending upon the size of proposed project. These documents are a step in that direction and on which we started working from September 2014 onwards. I commend the efforts of the team in Building Materials and Technology Promotion Council especially Shri J.K.Prasad and Shri Pankaj Gupta in finalization of the document. The documents were circulated to state governments and UTs and was also placed on the website of Ministry of HUPA and BMTPC for comments.

Valuable comments have been received from State Governments of Bihar, Gujarat, Jharkhand, Maharashtra, Tamil Nadu, UP and also from L & T. These have been considered and modification, as felt appropriate, incorporated.

These documents have been prepared to serve as model guidelines for inviting EOI for emerging alternate technologies. The State Government should adapt it as per their requirements with modifications. As we all gain experience in this new sector, we can further refine these to make it more suitable to our needs.


(Sanjeev Kumar)

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INTRODUCTION

The “Housing for All” Mission launched by Ministry of Housing & Urban Poverty Alleviation, envisages adoption of modern, innovative and green technologies for faster and quality construction of houses.

A number of alternate technologies, developed both within the country and abroad, have been found to be suitable for mass housing projects in the country. Some of the States have taken initiative to introduce these technologies in their projects. The Building Materials & Technology Promotion Council (BMTPC), under the Ministry of Housing & Urban Poverty Alleviation, has also identified, evaluated and recommended few technologies for mass housing. There are other technologies which are awaiting technical approval for use.

From identification to actual field application, new alternate technology has to face a number of impediments both technical & operational. One of the major bottlenecks is lack of clarity about the requirements of technology to be considered and guidelines for change from conventional tendering system based on item rates as per CPWD or PWD Schedule of Rates.

The State Governments like Gujarat and Andhra Pradesh have taken lead to frame their own methodology for introducing alternate technologies in their projects. The need to develop a Model Tender document for selection of agencies for technology-neutral construction of houses has been emphasized in various discussions with the State Governments as also during the Brain Storming Session organized by the Ministry of Housing & Urban Poverty Alleviation and BMTPC on the subject.

After deliberating on various options and considering practices adopted by some States, it was felt that to introduce new emerging technologies, giving fair opportunities to all suitable technology providers / agencies, as one of the viable options, State Governments could consider prequalifying / empanelment of alternate technology providers using technical and functional parameters in different capabilities depending upon the size of proposed project.

The document is in two parts i.e. (i) Guidelines for Empanelment of Agencies for Construction of Housing / Buildings using Alternate Technologies on Design and Built Basis and (ii) Model Expression of Interest.

The first part gives general guidance for tender process including parameters to be considered for selection of any technology and empanelment of agencies. The second part deals with Model Expression of Interest, giving General Information to be collected, Eligibility Criteria and other necessary requirements for selection of agency and related technology. Using this document as guide, the State Governments may develop their own process of empanelment of agencies for construction of houses in different categories, depending upon their financial capabilities.

Before finalizing these documents were circulated to State Governments and UTs and also put on website of the Ministry of Housing & Urban Poverty Alleviation and BMTPC. Valuable comments received from concerned agencies of Delhi, Tamil Nadu, UP, Gujarat, Jharkhand, Bihar & Mizoram Governments and also from Larsen & Toubro, Mumbai were duly considered to improve the documents and to give them final shape, as presented in this booklet.



Guidelines for Empanelment of Agencies for Construction of houses/buildings using Alternate Technologies on Design and Built Basis

This Expression of Interest (Eoi) has been prepared to serve as a model to be adapted by State Government with any necessary modifications as per local requirements and suitability. This is applicable where Project Authority has already decided in advance, to use alternate technology in place of conventional load bearing structures of Brick masonry & RCC or RCC framed structures with bricks/block masonry as filler walls.

1. Inviting Expression of Interest (Eoi) from reputed, experienced, technically and financially sound companies, firms, contractors / developers, JV (hereafter called Agency) for empanelment for construction of houses/buildings using alternate technologies on design and built basis through open advertisement in Newspapers and website of concerned Project Authority. A model Expression of Interest is placed at **Annex- I**.
2. Eoi shall be invited in two envelope system i.e. 1. Eligibility criteria, 2. Technical criteria.
3. Concerned Project Authority shall scrutinize the eligibility criteria and list out eligible Agencies. Shortlisting of only those Agencies shall be done who qualify the eligibility criteria.
4. A Technical Committee shall be constituted by the Project Authority including a few technical experts to evaluate the technical criteria of Eoi.
5. The shortlisted Agencies shall make a presentation before the Technical Committee. The evaluation of the technical criteria shall be done based on the parameters mentioned in the Table-1. If needed, visit to construction site, where technology has been used or being used, shall be arranged by the Agency.
6. The Project Authority shall prepare a list of empaneled agencies, which shall remain valid for at least one year. However, State Government may decide validity for more than one year, say two or three years with provision to add new agency every year.
7. The Project Authority shall invite financial bid on project to project basis from the empaneled agencies.
8. In case the financial bid is invited for number of packages, the Project Authority may take into consideration various factors like number of packages and number of houses in one package, strategy to decide sequence of opening of financial bids, option to distribute work to various technologies, strategy incase lowest bid varies significantly in different packages etc. At the time of calling financial bids, State Govt. may decide category of the agencies, based on their financial and other capabilities. In case of JV, annual turnover of each member of JV may be taken and considered for deciding the value of work which can be given to the Bidder.
9. The following additional provisions shall be included while preparing the financial bid:
 - a) Specifications of the short listed technology will be spelt out (could be based on the

Table-1: Marking System for Evaluation of Alternate Technology

Description		Marks
a)	Fulfilment of the requirements as given in Appendix – I of EoI	Mandatory
b)	Assessment of technology through presentation The presentation shall, inter-alia, focus on the following: i) The technology along with specifications ii) Construction methodology iii) Methodology for sourcing materials, components and execution of the project within stipulated time iv) Manpower, plant and machineries required (The Committee may consider giving weightage to experienced manpower) v) Detailed executed projects reinforcing the claim about quality, time and disaster resistance property	10
c)	Number of residential projects using proposed technology, max marks, 10. (agency should have completed atleast one project in India to qualify) • No. of projects using proposed technology completed in India <div style="text-align: right;">1 Project 2 Projects 2-5 projects Above 5 Projects</div> • Completed outside India- 5 or more projects	<div style="text-align: right;">2 3 5 10</div> 5
d)	Indigenous Source of required materials/components	5
e)	Speed of construction viz a viz conventional system (max 10 marks) Faster by 10%-20% 20%-40% Above -40% (Speed will be based on completed projects in last three years, preferably in India. However, if no project is completed in India, similar projects in other countries may also be considered.	<div style="text-align: right;">5 8 10</div>
f)	Maintenance requirement - No major maintenance requirement and could be done without any specialist manpower and equipment - No major maintenance requirement but specialist manpower and equipment needed - Major maintenance requirement	<div style="text-align: right;">5 3 0</div>
g)	Possibility of future flexibility/expandability of houses	5
h)	Eco friendliness (use of industrial/agriculture wastes, less embodied energy, recyclable, saving of water /natural resources)	5
Max. Marks		50

Notes:

- The qualifying criteria for eligibility for financial bid shall be minimum 30 marks in the technical criteria. In order to qualify, the technology needs to fulfil mandatory requirements.*
- Based on the above table, the constituted Technical Committee shall recommend the list of agencies and associated technology for empanelment by the Project Authority.*



minimum requirements of the various parameters) by the Project Authority at the time of inviting financial bid. This is essential in case more than one vendor are there for similar technology.

- b) The bid must be based on the plans prepared by the Project Authority. However, minor modifications in the plan, without affecting the functionality or the design intent, may be allowed.
- c) The financial bid shall be a lump sum bid on Turnkey basis for houses/buildings with all specifications and basic architectural and structural drawings.
- d) The empanelled agencies shall be able to arrange necessary training for the use and maintenance of the system, if needed.
- e) To ensure sustainability after the houses are constructed, the empanelled agency shall ensure that an effective maintenance Manual is in place and necessary training is provided, regarding the new technology adopted and relevant maintenance measures, to the team established by the Project Authority /Beneficiary during the Defect Liability Period. The empanelled agency shall be required to submit an yearly maintenance plan. The cost of maintenance of houses & internal services work shall be borne by the empanelled agency.
- f) The Defect Liability Period for the project shall be of 5 years after the completion of the project. The security deposit / performance guarantee shall be released in the following manner:

I.	After 2 years of completion of project.	2 %
II.	After 4 years of completion of project	2 %
III.	After 5 years of completion of project provided that there is no defect detected within the said period.	1%
- Note: The time period for defect liability and release of security deposit are suggestive, state government may decide different parameters as per suitability and practicality.*
- g) Structural performance guarantee, against the designed forces and environment including earthquakes, floods, cyclone etc., as applicable, of the said building to be constructed using proposed technology for at least 20 years is required to be furnished in the form of insurance of the structure
- h) Details of soil investigation of site by the Project Authority.

10. The Financial Bid shall be opened by the Committee constituted by the Project Authority.

11. After scrutiny and evaluation of financial bids, the work shall be awarded to lowest Bidder.

(Name of the Project Authority.....)

Address.....

Phone....., Fax....., Email.....

No.

Date

INVITATION OF EXPRESSION OF INTEREST

Project Authority (Name) invites Expression of Interest (Eoi) from reputed, experienced, technically and financially sound companies, firms, contractors / developers, JV (hereafter called agencies) for empanelment for construction of houses/buildings ranging from single storey to multi storey using alternate technologies on design and built *basis* in two envelopes system i.e. (i) Envelope-1- Eligibility criteria (ii) Envelope-2-Technical Criteria. Financial bid shall be invited only from empanelled agencies from project to project basis as decided by the Executing agency. Interested agencies having experience of design and construction using proposed alternate technology(ies) may send their Expression of Interest comprising Eligibility Criteria & Technical Criteria in separate sealed envelopes. The Eligibility Criteria of Eoi shall be opened by the Project Authority in the presence of interested agencies. The shortlisted agencies shall make a presentation before the Technical Committee. The date and time of the presentation by the eligible agencies will be intimated separately.

The details of eligibility criteria, technical criteria, and criteria for selection of technology along with instruction to the agencies are enclosed herewith. This can also be downloaded from the website (*Address of website*).

The Project Authority reserves the right to accept or reject any or all the Eoi without assigning any reason thereof.

(To be filled by the Project Authority)

1	Eoi fee	
2	Eoi validity period	
3	Last date & time for submission of Eoi	
4	Place of submission of Eoi and fee	
5	Time & date of opening of Eligibility Criteria	
6.	Time, date and venue for presentation by the agencies	To be communicated later.
7.	Contact Office	



EXPRESSION OF INTEREST

A) GENERAL INFORMATION TO AGENCIES

1. The agencies are required to submit the EoI containing Eligibility criteria and Technical Criteria in two separate sealed envelopes clearly marked **“Eligibility Criteria for Empanelment of Agencies for Construction of Houses / Buildings using Alternate Technologies”** and **“Technical Criteria for Empanelment of Agencies for Construction of Houses / buildings using Alternate Technologies.”**
2. **Both the envelopes should be put in one sealed envelope marked “EoI for Empanelment of Agencies for Construction of Houses / Buildings using Alternate Technologies”**
3. The EoI consisting of Eligibility Criteria, Technical Criteria and Criteria for selection of technology along with General Information to agencies can be seen at the website (address of the website) of the Project Authority.
4. The cost of EoI document will not be refunded under any circumstances.
5. The EoI offer shall be valid for 180 days from the date of its submission.
6. EoI without requisite fees and not fulfilling all or any of the conditions or submitted incomplete in any respect are liable to be rejected.
7. The Agency or one of its authorized representative, having proper authority on letter head of the Agency, will be allowed into the premises where Eligible Criteria shall be opened.
8. Labour law to be complied by the agencies. The Agency shall have a valid license under the Contract Labour (R&A) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The Agency shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act 1986.

The Agency shall also comply with the provisions of the building and other construction workers (Regulation of Employment & conditions of Service) Act, 1996 and the building and other construction workers Welfare cess Act 1996.

The Agency shall ensure the registrations of all eligible (inclusive of those of sub-contractors and petty contractors) with Construction Workers Welfare Board.

9. All the pages of the EoI submitted must be numbered and signed by the authorised signatory.
10. Canvassing in connection with the EoI be strictly prohibited and such canvassed EoI submitted by the Agency are liable to be rejected.
11. The Agency shall keep necessary books of accounts and other documents for the purpose

of the condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the Project Authority and further shall furnish such other information / document to the Project Authority.

12. The Agency shall submit only one EoI in his name for one technology / system. If Agency is applying for more than one technology / system, EoI shall be submitted for each technology / system separately. Submission of any additional EoI for the same technology in the name of their partner / Associates / group / company etc. shall disqualify them.
13. The Project Authority reserves the right to reject or accept any or all EoI at any stage without assigning any reason whatsoever.
14. EoI which do not fulfil all or any of conditions or are submitted incomplete in any respect are liable to be rejected. Conditional EoI shall not be accepted and will be rejected outright.
15. In case of any dispute or clarification in EoI, decision of Project Authority shall be final.
16. The Agencies are required to submit all the necessary documents as mentioned in EoI along with Eligibility Criteria & Technical Criteria. All the documents required to be submitted in EoI should be in English language only. If same are not available in English, then the concerned agency will be required to get such documents translated in English and get them legally authenticated, before submitting.
17. The technology / system shall be evaluated and shortlisted by the Technical Committee constituted by the Project Authority for the purpose. Any technology / system proposed by the Agency must fulfil the requirement as mentioned in **Appendix -I**. The Agencies shall have to make presentation on the technology before the Technical Committee.
18. Technical Criteria of only those agencies will be opened who qualify in Eligibility Criteria i.e. Envelope-1.
19. The Financial Bids will be invited only from those empanelled agencies who qualify in Technical Criteria i.e. Envelope-2.
20. The bidding capacity of the empanelled agencies should be equal to or more than the estimated cost of the work for which the tender may be invited in future. The bidding capacity shall be worked out by the following formula:

Bidding Capacity = $[AxNx2]-B$ Where

A= Maximum value of construction works executed in any one year during the last five years taking into account the completed as well as works in progress.

N= Number of years prescribed for completion of work for which criteria has been invited.

wB= Value of existing commitments and on-going works and LoI issued to be completed during the period of completion of work for which criteria have been invited.

21. The developer connected with housing activity satisfying all eligibility criteria except registration certificate can also apply, provided the successful agencies shall apply / produce its registration certificate before empanelment. Further, agencies having experience of construction of Building work from Developer / Client as a Builder or Contractor are also eligible.



22. Only one type of JV is allowed for any Agency, which is between the Technology provider and the Agency himself. In this case, the Agency shall submit all the documents regarding the technical & financial eligibility (Form A to F), whereas the technology provider shall submit all the certificates related to the construction technology and vice-versa.
23. In case the Agency is JV, the members of the JV shall furnish a Power of Attorney designating one of the members, as per the JV agreement, as their Lead Member. The lead member shall be fully responsible for the satisfactory performance of the JV.
24. A copy of the JV Agreement registered should be submitted at the time of financial bid. The JV agreement entered into the members of the JV should be specific to the project only.
25. The companies, firms, contractors / developers, JV must be legally entitled for carrying out construction of building works.
26. All aforesaid form must bear the signature of authorised persons of the firm / company/ contractor / developer.

B) ELIGIBILITY CRITERIA

1. Reputed, experienced, technically and financially sound *companies, firms, contractors / developers, JV* for Construction of Houses / Buildings, who will be able to meet the following eligibility criteria, shall be eligible to apply.
 - i) Registered Agency having valid statutory VAT registration, PAN No., WCT No, Service Tax No., PF, Labour etc.
 - ii) Agency should be Financially Sound to execute a project
 - iii) Agency should be well experienced having successfully completed building works as a prime contractor.
 - iv) The proposed alternate technology/system must have been used at least once in residential project in India. The Agency shall have to submit completion certificate of at least one building in India given by client. The agency should have completed at least 20000 sq ft of built up area and at least one building of similar height (G+1,G+2,G+3,---) in India. Technology / system proposed to be used in construction shall be certified for performance criteria (as per Appendix-I) by any of the following: (***The certificate must have approval for number of storeys for which it is suitable***)
 - a) BMTPC (under its Performance Appraisal Certification Scheme)
 - b) CBRI, Roorkee
 - c) SERC, Chennai
 - d) Any IIT's
 - e) Any NIT's
 - f) Any reputed National / International technical institutions, as approved by the Project Authority at the time of calling EoI.
2. The EoI of agencies who have been debarred from undertaking any work or also blacklisted

by any organization / agency in India or abroad as on the date of submission of EoI, shall be summarily rejected. An affidavit shall be submitted by the bidder that the Company is not blacklisted from the government organization.

3. The agencies will be evaluated under eligible criteria on the basis of details furnished by them.
4. If any information furnished by the Agency is found incorrect at a later stage, he shall be liable to be debarred from further bidding and taking works in Project Authority. The Project Authority reserves the right to verify the contents / particulars furnished by the Agency independently including inspection of work completed by them.
5. Even though any Agency may satisfy the above requirements, he would be liable to disqualification if the Agency has:
 - i) Made misleading or false representation or deliberately suppressed the information in the forms, statement and enclosures required in the eligibility criteria document.
 - ii) Record of poor performance such as abandoning work, not properly completing the contract, or financial failures / weaknesses etc.

List of Documents Required to be Submitted along with Eligibility Criteria (Envelope-1):

1. The Demand Draft of EoI fee of Approved Bank **in original**.
2. Audited balance sheet of last five financial years
3. Audited certificate showing net worth of last five financial years
4. Income tax return of last 5 financial years.
5. Copy of the Bank Solvency certificate (not older than six months) (Form A)
6. Certificate of work experience as mentioned in Eligibility Criteria (B-I, B-II & B-III)
7. Performance certificate for the proposed technology as mentioned in Eligibility Criteria point 1 (iv) above.
8. Performance Report (Form C)
9. Detailed organizational structure including technical manpower. (Form D)
10. Details of construction Plants, equipment etc. available with the Agency. (Form E)
11. Litigation Details (Form F)
12. Certificate of registration of Company/Firm.
13. Details of registration/empanelment with Central/State agencies/PSUs
14. Copy of VAT registration, PAN No., WCT No, Service Tax No.
15. PF registration certificate.
16. Valid license under Contract Labour (R&A) Act 1970.
17. Any other relevant documents as desired by the Agency.

**Table-1: Marking System for Evaluation of Alternate Technology**

Description		Marks
a)	Fulfilment of the requirements as given in Appendix – I of EoI	Mandatory
b)	Assessment of technology through presentation The presentation shall, inter-alia, focus on the following: i) The technology along with specifications ii) Construction methodology iii) Methodology for sourcing materials, components and execution of the project within stipulated time iv) Manpower, plant and machineries required (The Committee may consider giving weightage to experienced manpower) v) Detailed executed projects reinforcing the claim about quality, time and disaster resistance property	10
c)	Number of residential projects using proposed technology, max marks, 10. (agency should have completed atleast one project in India to qualify) • No. of projects using proposed technology completed in India <div style="text-align: right;">1 Project 2 2 Projects 3 2-5 projects 5 Above 5 Projects 10</div> • Completed outside India- 5 or more projects	5
d)	Indigenous Source of required materials/components	5
e)	Speed of construction viz a viz conventional system (max 10 marks) Faster by 10%-20% 5 20%-40% 8 Above -40% 10 (Speed will be based on completed projects in last three years, preferably in India. However, if no project is completed in India, similar projects in other countries may also be considered.	
f)	Maintenance requirement - No major maintenance requirement and could be done without any specialist manpower and equipment 5 - No major maintenance requirement but specialist manpower and equipment needed 3 - Major maintenance requirement 0	
g)	Possibility of future flexibility/expandability of houses	5
h)	Eco friendliness (use of industrial/agriculture wastes, less embodied energy, recyclable, saving of water /natural resources)	5
Max. Marks		50

The qualifying criteria for eligibility for financial bid shall be minimum 30 marks in the technical criteria. In order to qualify, the technology needs to fulfil mandatory requirements.

C) TECHNICAL CRITERIA

1. The Technical Criteria to be submitted by Agency in a separate sealed envelope.
2. The Technical Criteria of those agencies will be opened who qualify in Eligible Criteria.
3. The Technical Criteria shall be evaluated based on the documents submitted and criteria for evaluation of technology given at **Appendix –I**.
4. If the Technical Committee find necessary, the agencies shall arrange visit of technical team(s) nominated by the technical committee/ Project Authority to see the production facilities and construction work in progress /completed.
5. The Technical Criteria shall be evaluated by the marking system as per the details in **Table-1**:
6. After opening of Technical Criteria, if certain clarity required, it will be intimated to the Agency and it should be clarified by the Agency within a stipulated time, if not Project Authority will take appropriate decision.

List of Documents Required to be Submitted along with Technical Criteria (Envelope 2)

7. The interested agencies shall submit following details about the technology.
 - i) Description of Technology / System
 - ii) Detailed technical information including specification of materials and components used.
 - iii) Construction methodology
 - iv) Maintenance requirements –This deals with the ease with which the regular/ periodic/ preventive maintenance can happen for the proposed technology so as to attain the maximum service life period of the constructed buildings.

The agencies shall provide information regarding frequency of maintenance, requirements for major or routine maintenance, availability of tools and materials for maintenance including Annual maintenance cost as percentage of building cost. The agencies should be able to demonstrate that the maintenance required is practical and can be carried out with ease without specialised equipment/manpower.
 - v) Details of manufacturing / procurement of materials / components including source.
 - vi) Equipment / machineries to be involved in the construction.
 - vii) Lead time required to initiate the work from the date of award of tender.
 - viii) Certification details for the proposed technology as mentioned in the eligibility criteria point 1 (v) from any of the agencies listed (Attach Certificate and other documents, if any).
 - ix) Details of construction of dwelling units in India/abroad including number of houses,



carpet area, agency for which it has been done (attach Certificate from Department / Agency/Client).

- x) Information regarding speed of construction viz-a-viz conventional. Time period taken from start to completion of the project(s) in last three years.
- xi) Suitability of the technology for the region including vulnerability to earthquakes, floods, cyclones etc.
- xii) Availability of sufficient manpower required for execution of project using alternate technology (attach details).
- xiii) Photograph / Sketches of the proposed Technology / System along with houses completed using the technologies / systems.
- xiv) Details on flexibility/expandability of houses in future. – It is to be seen that whether the technology/system allows future expansion of the houses /buildings under consideration. Flexibility is the ability of the system to adapt to the requirements of the habitants.
- xv) Details of maintenance plan and its support system.
- xvi) Details of factory made structural and non-structural building components to be used.

LETTER OF TRANSMITTAL

From: _____

(Name of Agency)

To, _____

(Name of Project Authority)

Subject: Submission of Expression of Interest for Empanelment

Name of Work: _____

Sir,

Having examined the details given in Eol for the above work, we hereby submit the Eol and relevant documents.

1. I / we hereby certify that all the statements made and information supplied in the Eol and accompanying statements are true and correct.
2. I / we have furnished all information and details necessary for Eol and have no further pertinent information to supply.
3. I / we submit the requisite certified solvency certificate and authorize the Project Authority to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/ we also authorize Project Authority to approach individual employers, firms and corporation to verify our competency and general reputation.
4. I /we hereby certify that our company/firm has not been debarred/ blacklisted from undertaking any work by any agency/organization in India or abroad.

Name of work:

Certificate From:

Enclosures:

Date of Submission:

SEAL

Signature of applicant (s)



FORM 'A'

FORM OF BANKERS CERTIFICATE FROM A NATIONALIZED BANK

(Solvency certificate from a nationalized bank)

This is to certify that to the best of our knowledge and information, M/s/Sh. _____
_____ (having marginally noted address), a customer of our bank are / is respectable
and can be treated as good for any engagements up to a limit of INR _____
(INR _____).

(Signature) For the Bank

NOTE:

1. Banker's certificates should be on letter head of the Bank, sealed in cover addressed to Project Authority.
2. In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

FORM 'B-I'

DETAILS OF ALL WORKS COMPLETED DURING THE LAST FIVE YEARS ENDING LAST DAY OF THE PREVIOUS MONTH
IN WHICH Eoi WAS PUBLISHED

Sl. No.	Name of work/ Project & Location	Owner or sponsoring Organization	Cost of works in crores	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation / arbitration pending / in progress with details	Name of address / telephone of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Sign of Applicant

* indicate gross amount claimed and amount awarded by the Arbitrator

**FORM 'B-II'****DETAILS OF ALL WORKS COMPLETED WITH ALTERNATE TECHNOLOGY DURING THE LAST FIVE CONSECUTIVE YEARS ENDING LAST DAY OF THE PREVIOUS MONTH IN WHICH EOI IS PUBLISHED**

Sl. No.	Name of work/ Project & Location i/c number of stories and height of building	Owner or sponsoring Organization	Cost of works in crore	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Built up area in sq. meter	Litigation / arbitration pending / in progress with details*	Name of address / telephone of officer to whom reference may be made	Remarks (Mention emerging technology used in construction)
1	2	3	4	5	6	7	8	9	10	11

Signature of applicant(s)

* indicate gross amount claimed and amount awarded by the Arbitrator

FORM 'B-III'

PROJECTS WITH ALTERNATE TECHNOLOGIES UNDER EXECUTION OR AWARDED /LOI ISSUED

Sr. No.	Name of work/ Project & Location	Owner or sponsoring Organization	Cost of works in crores	Date of commencement As per contract	Stipulated date of completion	Up to date amount of the work executed (INR)	Slow progress if any & reason thereof	Name of address / telephone of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Certified that above list of works are complete and no work has been left out and the information given is correct to my / our knowledge and belief.

Signature of applicant(s)

**FORM 'C'****PERFORMANCE REPORT OF WORKS REFERRED TO IN FOR "B-I, B-II & B-III"**

1. Sr. No.
2. Name of work / Projects and Location
3. For Building works:
 - i. Nature of building
 - a. Load bearing
 - b. RCC Framed Structure
 - ii. Height of building & numbers of floor
4. Agreement No.
5. Client name:
6. Amount of Work:
7. Date of Starting of project:
8. Stipulated date of completion:
9. Actual date of completion:
10. Completion cost:
11. Justification for Delay, if any:
12. Amount of compensation
 - a. Levied for delayed completion, if any
 - b. Amount of reduced rate items, if any
13. Litigation tendency:
14. Feedback from client:

i.	Quality of work	Very good	Good	Fair	Poor
ii.	Finance Soundness	Very good	Good	Fair	Poor
iii.	Technical Proficiency	Very good	Good	Fair	Poor
iv.	Resourcefulness	Very good	Good	Fair	Poor
v.	General behaviour	Very good	Good	Fair	Poor

Third party feedback, if any:

Signature of applicant

Signature & Stamp of client

FORM 'D'**DETAILS OF ORGANIZATIONAL STRUCTURE**

1.	Name & address of the applicant	
2.	Telephone No. /Telex No./ Fax No.	
3.	Legal Status of the applicant (attach copies of original document defining the legal status(s) (a) An individual (b) A proprietary firm (c) A firm in partnership (d) A limited company or corporation (e) Joint Venture (JV)	
4.	Particulars of Registration with various Government bodies (attach attested photocopy). (a) Registration number (b) Organization / place of Registration i) ii) iii)	
5.	Name and titles of Director & Officer with designation to be concerned with this work.	
6.	Designation of individual authorized to act for the organization	
7.	Was the applicant ever required to suspend construction for a period of more than six months continuously after you commenced the construction? If so give the name of the project and reason of suspension of work.	
8.	Has the applicant or any constituent partner in case of partnership firm ever abandoned the awarded work before its completion? If so, give name of the project and reason for abandonment.	
9.	Has the applicant or any partnership firm, ever been debarred / black listed for tendering in any organization at any time? If so give details.	
10.	Has the applicant or any constituent partner in case of partnership firm ever been convicted by court of law? If so, give details	
11.	In which field of Civil Engineering construction you claim specialization and interest.	
12.	Any other information considered necessary but not included above.	
13.	List of the key technical Persons with qualification & experience	

Sign of the applicant(s)



FORM 'E'

DETAILS OF CONSTRUCTION PLANT & EQUIPMENT AVAILABLE WITH THE AGENCY

Sr. No.	Name of equipment	Nos	Capacity of type.	Age	Condition	Ownership status			Current location	Remarks
						Presently owned	Leased	To be purchased		
1	2	3	4	5	6	7	8	9	10	11
1.										
2										
3										

Signature of applicant(s)

FORM 'F'**LITIGATION DETAILS****Name of applicant / or parties:**

Applicant should provide information on any History of litigation or arbitration resulting from contracts executed in last five years or currently under execution:

Sr. No.	Year	Award for / against applicant	Name of cline, cause of litigation & matter of dispute	Disputed Amount in INR.

NOTE:

1. The above information shall be supported with necessary documents otherwise the same shall be treated as null & void.
2. If the information to be furnished in this schedule will not be given & come to the notice subsequently will result in disqualification of Agency.

Sign of Applicant(s)



REQUIREMENTS FOR EVALUATION OF ALTERNATE TECHNOLOGY

Alternate Housing Technologies suitable to Geoclimatic and hazard conditions of the region, having design compatibility & flexibility to suit the requirements of the structure to be built and minimum service life of 50 years and certified for its suitability by any one of the following:

- a) BMTPC (under its Performance Appraisal Certification Scheme)
- b) CBRI, Roorkee
- c) SERC, Chennai
- d) Any IIT's
- e) Any NIT's
- f) Any reputed National/International technical institutions, as approved by the project authority at the time of calling EoI

Alternate Housing Technology here means any technology, replacing the basic structural elements without compromising with desired functional and structural performance of the building of any of the following:

- i) *Load bearing building i.e. walling, roofing built with conventional technology of brick masonry / CC block & RCC roof.*
- ii) *Conventional RCC beam and column frame structure with infill walling material e.g. burnt clay brick, fly ash bricks, CC blocks or Aerated Cement concrete blocks wall etc.*

The technology must have been evaluated for the following broad mandatory requirements:

Mandatory Requirements –The technology shall have to fulfil the mandatory requirements. Otherwise it is liable to be rejected.

- i. Structural safety (Strength & Serviceability) of the system against vertical and lateral load (wind & seismic loads as applicable) as per relevant Indian Standards, including performance of joints, as applicable.
- ii. Fire safety as per National Building Code (latest version) and/or provisions in the local Bye-laws.
- iii. Resistance against water and moisture penetration.- As per any recognised international standard/practice like ASTM/Agreement South Africa.
- iv. Thermal behaviour –Comparing the thermal transmission loss of the system with that of traditional construction (refer IS 3792:1978*).Thermal Performance should either be comparable or better than conventional.
- v. Acoustic behaviour – Minimum sound transmission loss of 40 dB as per IS 1950:1962**

- vi. Durability –to be evaluated considering following parameters
 - a) Expected service life of the system compared to conventional
 - b) Evidence of building(s) sustained for at least 10 years.
 - c) Performance under accelerated tests like alternate wetting and drying, salt spray test etc.
- vii. All the materials used shall conform to Indian/International Standards must be accepted by the Technical Committee/Project Authority based on relevance and suitability

*IS 3792:1978 Indian Standard Guide for heat insulation for non-industrial buildings

**IS 1950:1962 Indian Standard Code of practice for sound insulation of non-industrial buildings



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