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**Sub.: Operational Guidelines for construction of Light House Projects (LHPs) at six locations viz. Rajkot (Gujarat), Ranchi (Jharkhand), Indore (Madhya Pradesh), Chennai (Tamil Nadu), Lucknow (Uttar Pradesh) and Agartala (Tripura) under Global Housing Technology – India (GHTC-India) – reg.**

Sir,

I am directed to forward herewith the Operational Guidelines for construction of Light House Projects (LHPs) at six locations viz. Rajkot (Gujarat), Ranchi (Jharkhand), Indore (Madhya Pradesh), Chennai (Tamil Nadu), Lucknow (Uttar Pradesh) and Agartala (Tripura) under Global Housing Technology – India (GHTC-India).

2. This issues with the approval of the Competent Authority.

Yours faithfully,



(B.K. Mandal)

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**Encl: As above.**

**Copy to:**

PSO to Secretary (HUA)/ PPS to JS&MD(HFA)/ PA to Dir. (HFA-V)

**Copy also to:**

DG, CPWD/ CMD, NBCC/ CMD, HPL/ ED, BMTPC



# **GLOBAL HOUSING TECHNOLOGY CHALLENGE-INDIA (GHTC-INDIA)**

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## **OPERATIONAL GUIDELINES FOR IMPLEMENTATION OF LIGHT HOUSE PROJECTS (LHPs)**



Ministry of Housing and Urban Affairs  
Government of India

July, 2019

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## **Preamble**

To achieve the goals of Housing for All by 2022 and to bring about major transition in the building construction industry by mainstreaming alternative and innovative technologies, Government of India through the Ministry of Housing and Urban Affairs (MoHUA) launched Global Housing Technology Challenge- India (GHTC-India) on January 14, 2019. GHTC- India aims to identify and mainstream a basket of innovative technologies from across the globe that are sustainable, green and disaster-resilient, cost effective, speedier, complying with quality standards, meeting diverse geo-climatic conditions and desired functional needs. It aspires to develop an eco-system to deliver on the technological challenges of the housing construction sector in a holistic manner.

2. As one of the important components of GHTC-India, the Light House Projects are to be undertaken in six different geo-climatic regions in identified States/UTs using the shortlisted technologies from the Challenge process and suitable for the particular region.

3. In the above background and, with a view to delineating the overall approach that will guide MoHUA, State/UT Governments & Technology Providers, it has been decided to put in place broad operational guidelines in the manner in which the construction of such 'Light House Projects', hereinafter referred to as 'LHPs' shall be undertaken.

## **I. Introduction**

- a) The Hon'ble Prime Minister envisaged the importance of the adoption of alternative and innovative construction technologies to improve the pace and quality of work under Pradhan Mantri Awas Yojana- Urban (PMAY-U) Mission to address the challenges of rapid urban growth and its attendant requirements. Within the ambit of the overarching PMAY (U), a Technology Sub-Mission (TSM) has been set up, to facilitate the adoption of innovative, sustainable, eco-friendly and disaster-resilient technologies and building materials for low-cost, speedier and quality construction of houses.
- b) Construction of houses at this scale is an opportunity for inviting alternative technologies from across the globe to trigger a major transition through the introduction of cutting-edge building materials, technologies and processes.
- c) Accordingly, through wide consultation, MoHUA has initiated the Global Housing Technology Challenge- India (GHTC- India) which aims to identify and mainstream innovative construction technologies from across the globe for affordable housing that are sustainable, green and disaster-resilient. These are to be cost effective and speedier while enabling the quality construction of houses, meeting diverse geo-climatic conditions and desired functional needs. Future technologies will also be supported to foster an environment of research and development in the country. GHTC-India aspires to develop an eco-system to deliver on the technological challenges of the housing construction sector in a holistic manner.
- d) The challenge has three components viz. i) Conduct of Grand Expo-cum-Conference, ii) Identifying Proven Demonstrable Technologies from across the world for construction of Light House Projects (LHPs), and iii) Promoting Potential Technologies through the establishment of Affordable Sustainable Housing Accelerators- India (ASHA-India) for accelerator and incubation support.
- e) GHTC-India shall provide an opportunity for the States/UTs to host the LHPs using innovative and fast track construction technology from across the world selected through a global challenge. Sites provided by States/ UTs will be used for construction of LHPs using proven, alternate and innovative technologies shortlisted through GHTC-India.

- f) In order to propagate the transition to different innovative technologies across the six locations, one kind of shortlisted technology would be allotted work in one location only and all funds will be deposited in advance in escrow account of BMTPC being a technical partner of GHTC-India. One project will be awarded to each region. The alternate & innovative technologies are technologies which will replace the conventional construction practices such as:
- i. Load bearing masonry building, i.e., walls built with masonry made of brick, cement concrete solid, hollow blocks and any other masonry, and with roof made of RC.
  - ii. Cast in-situ Reinforced Concrete (RC) frame building with masonry infill walls and cast in-situ RC slab.

## **II. Objective**

- a) Acquisition of innovative and proven housing technology knowhow by State/UTs.
- b) Demonstrating and delivering ready to live houses with speed, economy and with better quality of construction in a sustainable manner.
- c) To create mass awareness among stakeholders such as State/UT, Urban Local Bodies, technical professionals, builders, development agencies and others on alternate technologies being adopted in respective LHPs.
- d) To serve as live laboratories for both faculty and students of IITs/ NITs/ Engineering colleges/ Planning and Architecture colleges, Builders, Professionals of Private and Public sectors.
- e) Technical evaluation & documentation of alternate & innovative technology & mainstreaming of the technology.
- f) Development of Schedule of Rates (SoRs) for selected proven technologies by CPWD and BMTPC

## **III. Scope**

- a) These guidelines lay down the guiding principles, roles & responsibilities of MoHUA/ State/UT/ ULB and the operational and other responsibilities of designated agencies of the MoHUA.

- b) As the LHPs are linked to the overall objective of the PMAY(U) Mission, the projects will be located in urban areas identified by only those States/UTs, which have participated in the Challenge process and qualified by MoHUA based on selected parameters.
- c) Technologies to be selected for the construction of LHPs shall be from basket of technologies shortlisted by Technical Evaluation Committee (TEC), as constituted by MoHUA under GHTC-India. Further, considering that large scale housing constructions are being undertaken by the Indian Army and Central Armed Police Forces, they may like to introduce alternative housing technologies into the country through GHTC- India. Accordingly, if these agencies are willing, they may undertake projects on their own land, and with their own finances, using any selected technology through this challenge.

#### **IV. Salient Features**

- a) LHP, shall mean a model housing project with approximate 1,000 houses built with shortlisted alternate technology suitable to the geo-climatic and hazard conditions of the region. This will demonstrate and deliver ready to live houses with speed, economy and with better quality of construction in a sustainable manner.
- b) The minimum size of houses constructed under LHP shall be in accordance with the prevailing guidelines of the Pradhan Mantri Awas Yojana (Urban).
- c) Constructed housing under LHP will include on site infrastructure development such as internal roads, pathways, common green area, boundary wall, water supply, sewerage, drainage, rain water harvesting, solar lighting, external electrification, etc.
- d) Houses under LHP will be designed keeping in view the dimensional requirements laid down in National Building Code (NBC) 2016 with good aesthetics, proper ventilation, orientation, as required to suit the climatic conditions of the location and adequate storage space, etc.
- e) Convergence with other existing centrally sponsored schemes and Missions such as Smart Cities, AMRUT, Swachh Bharat (U), National Urban Livelihood Mission (NULM), Ujjwala, Ujala, Make in India shall be ensured during the designing of LHPs at each site.

- f) The structural details shall be designed to meet the durability and safety requirements of applicable loads including earthquakes and cyclone and flood as applicable in accordance with the applicable Indian/International standards.
- g) Cluster design may include innovative system of water supply, drainage and rain water harvesting, renewable energy sources with special focus on solar energy.
- h) The period of construction will be maximum 12 months from the date of handing over of sites to the successful bidder after all statutory approvals. Approvals will be accorded through a fast track process by the concerned State/UT Government.
- i) Technology Providers successfully completing the construction of LHPs within the stipulated 15 month's period of the contract (including 3 months for preparing relevant drawings and taking all statutory approvals from various agencies in State followed by 12 months period for actual construction) will be rewarded with USD 20,000 each. A further incentive for early completion is being provided wherein technology providers who complete LHPs in less than 12 months will receive an incrementally higher bonus of USD 2,000 for each month less than stipulated period of 12 months.
- j) For the subsequent allotment of constructed houses under LHPs to the eligible beneficiaries in States/ UTs, procedures of existing guidelines of PMAY (U) will be followed.

## **V. Locations of Light House Projects (LHPs)**

- a) The LHPs using shortlisted technology providers will be undertaken each at the six PMAY (U) regions of the country viz. Northern, Central, Eastern, Western, Southern and North-Eastern parts of the Country.

## **VI. Implementation Methodology**

- a) In consultation with the State/ UT shall provide preliminary lay out of site, architectural drawing of proposed buildings as per applicable Building Bye-laws and Development Control Regulations, soil investigation report, specification for finishing items etc. for the purpose of inviting bids. The



proposed structure shall preferably be not less than G+3. The suitability of site would also be assessed by designated Central agency of MoHUA. The Detailed Project Reports (DPRs) under LHPs shall be examined/approved by the Central Sanctioning and Monitoring Committee (CSMC) as per guidelines of PMAY (U) Mission.

- b) The technologies as submitted through on-line application & shortlisted by TEC in the form of basket of technologies & recommended for the specific location, shall be considered for the construction of LHP in particular State/UT.
- c) Request for Proposal (RFP) for construction of houses under LHPs will be issued by MoHUA. Owing to the unique nature of the challenge and for effective coordination with States/UTs, evaluation of bids of all six regions will be undertaken centrally by a 'Bid Evaluation Committee (BEC)' including a member from the concerned State Govts. The Implementing Agency (IA) for overall coordination of all the activities of GHTC-India including development and construction of LHPs will be MoHUA.
- d) Bids for LHPs will be opened in descending order as per the land area of the project. In order to propagate the use of different technologies across the regions, one shortlisted technology provider would be allotted work in one region only. Though the technology providers are free to participate in the bidding process for more than one location.
- e) Once a particular technology (as distinct from technology provider) has been selected as winner for one location, bids using the same technology for other locations shall not be opened. This will ensure that different locations will have separate technologies.
- f) Bids for each location shall be invited on EPC mode and selected bidder shall submit vetted structural design and other requisite details preferably within three weeks of Letter of Intent (LoI) issued to it. Bidder shall submit detailed drawings to the concerned authority of State/UT with changes in architectural drawing, if any, (owing to specific nature of the technology and/or towards improvement in original drawing) in agreement with State/UT. The State/UT shall approve the drawing in fast-track mode.

- g) During the process of housing construction, necessary data, information and other details will be collected for developing Schedule of Rates (SORs) by Central Public Works Department (CPWD) and Building Materials and Technology Promotion Council (BMTPC).
- h) These LHPs at different places shall serve as open live laboratories for different aspects of transfer of technologies to field application, such as planning, design, production of components, construction practices, testing etc. for both faculty and students of IITs/NITs/ Engineering colleges/ Planning and Architecture colleges, Builders, Professionals of Private and Public sectors and other stakeholders involved in such constructions. For this purpose, a sustained Information Education and Communication (IEC) activities shall be planned for Awareness and Promotion of new technologies through Multi-layered event publicity and web updates. IEC activities will be fully funded by MoHUA.
- i) Capacity building activities like trainings, workshops, thematic interactions, study, exposure visits, technological meetings etc. will be organized for enhancing the capacities of various stakeholders in implementation of the LHPs.
- j) The updates during the construction of LHPs shall also be updated at the National Knowledge Network (NKN) for making the young generation familiarised with the overall process of use of innovative technologies and technological advancements.
- k) After completion of the project, houses constructed under LHP shall be allotted to PMAY (U) eligible beneficiaries only in accordance with the PMAY (U) guideline.

## **VII. Roles and Responsibilities**

The broad roles & responsibilities of various Stakeholders shall be as below:

- a) Ministry of Housing and Urban Affairs (MoHUA), Government of India**
  - i. Ensure overall implementation, review & monitoring of LHPs
  - ii. Process and release the Central assistance and Technology Innovation Grant (TIG) component for the LHPs to BMTPC complying with the relevant guidelines.
  - iii. Issue the RFP for LHPs and finalize the bids through constitution of a Bid Evaluation Committee (BEC).

- iv. Open an Escrow Account at BMTPC in which funds from Central Government, State Government/ULB and beneficiaries will be deposited and disbursed complying with the guidelines.
- v. Constitute a Project Monitoring Committee (PMC) at Central level for regular review of the LHPs.

**b) State Government**

- i. State Government through State Level Appraisal Committee (SLAC) and State Level Sanctioning and Monitoring Committee (SLSMC) shall approve the Light House Projects (LHPs) as done for PMAY (U) projects under PMAY (U) Guidelines.
- ii. Nominating one member from the State Government as part of Bid Evaluation Committee (BEC) constituted at MoHUA for the purpose of LHPs.
- iii. Ensure all approvals for LHPs in fast-track mode.
- iv. Ensure release of the matching State, ULB & Beneficiary share in the same pattern that of MoHUA to the designated Agency of MoHUA. Any increase in project cost shall be borne by State Government.
- v. On behalf of the State, State Level Nodal Agency (SLNA) shall coordinate with MoHUA and Urban Local Bodies (ULBs)/ Development Agency (DA) till the completion & handing over of the LHPs.
- vi. LHP project shall be registered under the provisions of RERA Act by concerned State Govt./ ULB/ DA or case may be.

**c) Urban Local Body (ULB) / Development Authority (DA)**

- i. ULB/DA will hand over encumbrance free land to the selected technology provider/ developer.
- ii. It will provide unit plan, floor plans and overall site layout as per applicable & building bye-laws. It will also update about status of existing water supply, sewage treatment and electricity etc. and further provide the same.
- iii. ULB/DA will facilitate and provide necessary statutory approvals for the project to the developer on fast track mode.
- iv. ULB/DA will identify the beneficiaries before the start of project and will be responsible for collection of beneficiary share in line with the funding pattern of Central Government and State Government.
- v. Facilitate logistics support to selected technology provider/ developer during construction of LHP.

**d) Selected Technology Provider (Developer)**

- i. Shall be responsible for completing the building & all internal infrastructure works including the lifts as per prescribed specifications, terms & conditions of the contract within the specified timeframe while strictly adhering to quality control norms and maintaining them during the defect liability period.
- ii. Facilitate propagation of the project through webcasting, visit of various teams, conduction of training programmes etc.
- iii. Provide necessary data & technical details for preparation of SOR & standard specifications for the Technology.

### **VIII. Funding Pattern**

- a) The funding for the LHPs constructed under GHTC-India will be as per the guidelines of PMAY (U). A Technology Sub-Mission (TSM) has been formed under the PMAY (U) mission. The activities proposed under LHPs will be financed under the Capacity Building allocation of PMAY (U) Mission.
- b) Application of innovative and alternative construction technologies at limited scale has large cost implications but has a significant opportunity cost. To offset this impact and absorb the issues related to economies of scale and other related factors, a Technology Innovation Grant (TIG) is planned. TIG will be a financial grant and will be in addition to the existing funding under PMAY (U). The MoHUA for the purpose of LHPs shall release an amount of Rs. 2.00 lakh or 20% of the estimated cost (including internal infrastructure), whichever is lesser for the project to BMTPC as TIG. Apart from the State Share, the State Governments may also provide additional TIG on the same pattern.
- c) The project cost viz. the cost of Civil works along with internal infrastructure shall include planning and design charges, preparation of Detailed Project Report (hereinafter referred to as DPR) including Architectural and working drawings which are suitable for Construction, preparation of structural design, vetting of structural design from reputed institutions like IITs, material testing from NABL accredited labs, contingency charges etc. Project cost shall also include internal infrastructure developments such as internal roads, pathways, common green area, boundary wall, water supply, water tank, site development, internal electrification, sewerage, drainage, firefighting system, lift shafts and machine room, lifts for multistory blocks, transformers along with HT/LT panel, sewage treatment plant and Diesel Generator (DG) set for emergency backup power for lift operation, etc.

The funding pattern of LHPs (per dwelling unit) will be as follows: -

| Sl No | Share       | Amount  | Funding Agency     |
|-------|-------------|---|--------------------|
| (i)   | Central     | Rs. 1.50 Lakh per dwelling unit (Fixed)   | MoHUA              |
| (ii)  | TIG         | Up to Rs. 2.00 Lakh per dwelling unit or, 20% of the estimated cost per dwelling unit, whichever is less. | MoHUA              |
| (iii) | State       | As applicable in existing AHP projects under PMAY(U)  | State Government   |
| (iv)  | Beneficiary | As applicable in existing AHP projects under PMAY(U)  | Beneficiary itself |

*\* The State/beneficiary share may vary State to State depending upon the project cost. However, MoHUA will pay only Central Assistance i.e. Rs. 1.50 Lakh per DU and TIG share i.e. 20% of the estimated cost per DU or Rs. 2.00 Lakh per DU, whichever is less.*

- d) Charges for site visits, daily supervision and monitoring charges, quality assurance of LHPs, etc. shall be borne by MoHUA. Other charges such as training cost, cost of documentation and evaluation / hiring of reputed technical institution, if any, shall be fully funded by MoHUA.
- e) Award of TIG shall be contingent on the States/ UTs securing required clearances, certifications, and approvals etc. for the use of new construction technologies locally. State/UT shall earmark additional funds for executing these LHPs under GHTC-India as per the guidelines of PMAY (U) in State/ UT budget.
- f) Funding for LHPs shall be managed by BMTPC. A dedicated Escrow Account will be opened at BMTPC for this purpose. Central Assistance for LHPs will be released to BMTPC by MoHUA. Simultaneously, for effective implementation of LHPs, the State matching share along with beneficiary share for LHPs will be released by the concerned State Govt./ ULB/ Development Authority in advance to the BMTPC as per funding pattern of PMAY (U). Further, BMTPC with the approval of MoHUA will release the funds as per payment terms of contract to the selected developer as per the stages and progress of work of LHPs, based on the recommendations of the

Project Monitoring Committee to be constituted by MoHUA.

- g) The State/UT shall keep its entire share of the project including beneficiary share ready in advance so that the fund flow to the project is not delayed. It shall take all necessary measures in this regard. The State/UT is required to allot the houses during the initial stage of construction of houses (before the release of second installment), so that State/UT can deposit the beneficiary share in Escrow Account of BMTPC on time.
- h) The fund release mechanism to the developers for LHPs will be as per the exiting guidelines of PMAY (U). The funds (Central Assistance & TIG) for LHP will be released by MoHUA to the BMTPC in three instalments as follows:-
  - i. 1<sup>st</sup> instalment of 40% will be released to BMTPC on approval of the project by CSMC.
  - ii. 2<sup>nd</sup> instalment of 40% will be released to BMTPC based on utilization of 70% of the earlier (1<sup>st</sup> Installment) instalment and commensurate physical & Financial progress of LHPs and Utilization Certificates (UCs) in the prescribed format as per General Financial Rules (GFR) 2017.
  - iii. The 3<sup>rd</sup> and final instalment of 20% shall be released to BMTPC on receipt on satisfactory completion report.
- i) The concerned state is required to release their share along with beneficiary share in advance in the same pattern (as above) to the Escrow account at BMTPC for smooth implementation of the projects.
- j) On final completion of the project, if the total cost of project is increased due to force majeure, the same will be placed for approval of CSMC along with adequate justification.
- k) Any variation in the project cost will be borne by State Government through State /beneficiary share. Central Assistance and TIG will remain fixed.
- l) Concerned States are encouraged to partner with banks/Financial institutions so that the beneficiaries are provided with the credit facility to meet their financial requirements.

## **IX. Monitoring & Evaluation**

- a) A **Project Monitoring Committee (PMC)** will be set up at MoHUA to oversee the entire progress of construction of LHPs at six locations. This committee shall comprise of
  - i. Representative of CPWD,
  - ii. Member from HFA Directorate, MoHUA
  - iii. Representative of BMTPC,
  - iv. Representative of concerned SLNA constituted for PMAY (U)
  - v. Representative of concerned Urban Local Body/ Development Authority
  - vi. Expert from IIT/NIT and
  - vii. Any other member may be nominated by MoHUA as and when required.
- b) The Project Monitoring Committee shall work out suitable strategy for routine supervision of the projects as felt necessary.
- c) The PMC shall meet at least once in a month and will report periodic progress of the project to MoHUA till the handing over of the project to State Government. BMTPC as a Technical partner for GHTC-India shall provide the necessary technical inputs as per requirements.
- d) The LHPs will also be evaluated and documented by reputed technical institutions as nominated by MoHUA.

## **X. Operation and Maintenance**

- a) After completion of the LHPs in all respect, it will be handed over to the concerned State Govt/ ULB/ DA by the selected agency, after issuance of NOC and other approvals from MoHUA.
- b) Technology provider/ developer shall enable the formation of an association or society or co-operative society or a Residents Welfare Association (RWA) as the case may be of beneficiaries as per Act after allotment of houses to beneficiaries. Further, normal routine maintenance of the LHPs will be responsibility of concerned State/ ULB/ DA and expenditure will be met by State Govt./ ULB/ DA. However, any remedial measures pertaining to structural issues/ major distress occurring in the LHP will be taken up by the selected agency at their own cost for a period of five years from the date of completion of project. After allotment of LHPs to the beneficiaries, the same will be maintained as per the provisions under PMAY (U) Guidelines.

- c) To ensure sustainability after the houses are constructed, the technology provider/ developer shall ensure that an effective maintenance Manual is in place and necessary training and handholding is provided to State/ ULB/ DA officials, regarding relevant maintenance measures of the projects within five years of defect liability period.

**XI. Relaxation**

- a) If any amendment or relaxation is required to be done in these operational guidelines, the same may be done with the approval of the same competent authority as that in respect of PMAY (U) guidelines.

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