

**GOVERNMENT OF INDIA  
MINISTRY OF HOUSING AND URBAN AFFAIRS**

**LOK SABHA**

**STARRED QUESTION NO. 279**

**TO BE ANSWERED ON DECEMBER 21, 2023**

**INNOVATIVE AND SUSTAINABLE CONSTRUCTION TECHNOLOGY**

**NO. 279. SHRI BHARTRUHARI MAHTAB:**

**Will the Minister of HOUSING AND URBAN AFFAIRS be pleased to state:**

- (a) the measures taken by the Union Government to assist the States in the adoption of more innovative, sustainable, eco-friendly and disaster-resilient technologies and building materials for construction of houses;**
- (b) whether the Union Government proposes to open an Affordable Sustainable Housing Accelerators Center in Odisha;**
- (c) if so, the details thereof and if not the reasons therefor; and**
- (d) the number of houses constructed using new construction technologies, State/UT-wise?**

**ANSWER**

**THE MINISTER OF HOUSING AND URBAN AFFAIRS**

**(SHRI HARDEEP SINGH PURI)**

**(a)to (d): A statement is laid on the Table of the House.**

## STATEMENT

### **STATEMENT REFERRED IN REPLY TO LOK SABHA STARRED QUESTION NO. 279\* FOR 21.12.2023 REGARDING 'INNOVATIVE AND SUSTAINABLE CONSTRUCTION TECHNOLOGY'**

**(a) : Under Pradhan Mantri Awas Yojana - Urban (PMAY-U), a Technology Sub-Mission (TSM) has been set up for promotion and adoption of innovative, sustainable, eco-friendly and disaster-resilient technologies and building materials by various stakeholders of construction sector for fast, cost effective and quality construction of houses. Following activities have been undertaken under TSM for promoting modern, innovative and green technology for faster and quality construction of houses:**

- i. Identification, Evaluation and Certification of Emerging Technologies for adoption by Public/Private agencies.**
- ii. Global Housing Technology Challenge - India (GHTC-India) was initiated to identify and mainstream globally best available proven construction technologies that are rapid, sustainable, green and disaster resilient. Under GHTC-India, 54 innovative proven construction technologies were shortlisted from across the globe.**
- iii. Six Light House Projects (LHPs) using six distinct technologies shortlisted under GHTC-India are constructed at six places in the country.**
- iv. 14 Demonstration Housing Projects (DHPs) using new technologies are built under PMAY-U to showcase innovative technology options to States/Union Territories (UTs) and disseminating technical awareness among professionals.**
- v. A free online Enrolment of TECHNOGRAHIS has been started for exposing the interested stakeholders to learn different phases of use of innovative technologies in LHPs for adoption and replication.**
- vi. An online course named NAVARITIH (New, Affordable, Validated, Research Innovation Technologies for Indian Housing) has been started to enhance the capability of building professionals about the new and emerging building materials, technologies and processes for construction.**
- vii. Indian Housing Technology Mela (IHTM) in 2021 was organized to showcase the domestic indigenous and innovative technologies, building materials and construction processes for low & medium rise houses. 84 innovative technologies/products/materials were shortlisted under IHTM. In addition, under the Indian Urban Housing**

**Conclave (IUHC) 2022, a National Exhibition on Innovative construction practices was organized to showcase more than 85 innovative construction systems and materials.**

- viii. Ministry of Housing and Urban Affairs (MoHUA) in association with GIZ and Building Materials and Technology Promotion Council (BMTPC) has hosted series of trainings/workshops on Innovative Construction Technologies and Thermal Comfort for Affordable Housing named RACHNA (Resilient, Affordable and Comfortable Housing through National Action). More than 150 RACHNA training programmes across the country have been successfully conducted, covering over 11,000 stakeholders.**
  - ix. Performance Appraisal Certification Scheme (PACS) is being operated for Identification, Evaluation and Certification of Emerging Technologies suiting to different geo-climatic conditions of the country, which are safe, sustainable and environment-friendly and ensure faster delivery of quality houses by BMTPC, MoHUA. Under PACS, so far 77 innovative products and systems have been certified.**
  - x. A series of offsite Workshops/Webinars, Webcasting, Mentoring on Technical know-how/Modules were organised jointly with State Governments for capacity building and handholding support on innovative construction technologies.**
  - xi. Various publications on innovative construction technologies and other areas related to faster, cost effective, environment friendly, disaster-resistant, sustainable construction have been brought out.**
- (b) & (c): No, Sir. Affordable Sustainable Housing Accelerator – India (ASHA-India) was launched by MoHUA under TSM component of PMAY-U to nurture upcoming Indian individuals or technology ventures in the field of construction technology in housing sector by providing all the necessary support to entrepreneurs to make their products and services commercially viable. The selection under ASHA was based on applications invited by the Ministry. Based on the proposals submitted by the respective Institution/Laboratory, the selected potential technologies are presently getting incubation support through various institutions viz. Indian Institute of Technology (IITs) of Bombay, Kharagpur, Madras, Roorkee and CSIR – North East Institute of Science and Technology (NEIST).**
- (d): The State-wise details of houses constructed using new construction technologies in the country so far under PMAY-U are at Annexure.**

**Annexure referred in reply to LS SQ No. 279 due for answer on 21.12.2023**

**State/UT-wise details of houses constructed using new construction technologies in the country so far under PMAY-U**

S. No.	State/UT	EPS and other Sandwich Panel	Monolithic RCC using Aluminum Formwork	Monolithic RCC using Tunnel Formwork	Precast RCC Technology	Precast RCC (Waffle Crete)	SLIP form work	Fly-Ash Hollow Blocks	Precast 3 D Volumetric Technology	Prefabricated Steel Structure	Structural Stay in Place Formwork System	Light Gauge Steel Frame Structure (LGSF)	Glass Fiber Reinforced Gypsum (GFRG) Panel	Over all houses Sanctioned
1	Andhra Pradesh	192	7,01,481	-	2,336	-	-	-	-	-	-	-	36	7,04,045
2	Bihar	-	-	-	-	-	-	-	-	-	36	-	-	36
3	Chhattisgarh	-	6,882	-	11,111	-	-	-	-	-	-	-	-	17,993
4	Delhi	-	17,412	-	73,496	-	-	-	-	-	-	-	-	90,908
5	Gujarat	-	47,606	1,144	-	6,953	-	-	-	-	-	-	-	55,703
6	Haryana	-	14,700	-	10,750	-	-	-	-	-	-	-	-	25,450
7	Himachal Pradesh	-	-	-	-	-	-	-	-	249	-	-	-	249
8	Jharkhand	-	-	750	40,665	-	-	-	1,008	-	-	-	-	42,423
9	Karnataka	-	29,074	-	12,555	-	133	-	1,520	-	-	-	-	43,282
10	Madhya Pradesh	1,024	-	-	-	-	-	-	-	-	-	-	-	1,024
11	Maharashtra	-	1,25,221	32,031	2,49,225	-	3,099	864	-	-	-	-	-	4,10,440
12	Odisha	32	-	-	7,762	-	-	-	-	-	-	-	-	7,794
13	Puducherry	-	1,136	-	-	-	-	-	-	-	-	-	-	1,136
14	Tamil Nadu	-	21,428	532	3,664	-	-	-	-	-	-	-	-	25,624
15	Telangana	-	12,316	8,739	-	-	-	-	-	-	16	16	-	21,087
16	Tripura	-	-	-	-	-	-	-	-	-	-	1,000	-	1,000
17	Uttar Pradesh	40	12,572	-	61,782	-	-	-	-	-	1,040	-	-	75,434
18	Uttarakhand	-	2,187	-	-	-	-	-	-	-	-	-	-	2,187
19	West Bengal	-	12,601	-	-	-	58	-	-	-	-	-	-	12,659
	<b>Total</b>	<b>1,288</b>	<b>10,04,616</b>	<b>43,196</b>	<b>4,73,346</b>	<b>6,953</b>	<b>3,290</b>	<b>864</b>	<b>2,528</b>	<b>249</b>	<b>1,092</b>	<b>1,016</b>	<b>36</b>	<b>15,38,474</b>