GOVERNMENT OF INDIA
MINISTRY OF RURAL DEVELOPMENT
DEPARTMENT OF RURAL DEVELOPMENT

LOK SABHA
UNSTARRED QUESTION NO. 2568
ANSWERED ON 05/08/2025

Green Technology under PMGSY

2568. Smt. Shambhavi:
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Will the Minister of RURAL DEVELOPMENT be pleased to state:

(a) the number of road works completed under Pradhan Mantri Gram SadakYojana (PMGSY) that have passed first-tier and second-tier quality checks since 2020, State and year-wise;
(b) the proportion of roads constructed using green technologies and the manner in which that impacted cost-effectiveness and long-term durability since 2020, State and year-wise;
(c) the details of the measures taken by the Government to ensure the quality and durability of rural roads constructed under PMGSY;
(d) the details of the steps taken by the Government to incorporate new-age construction materials such as waste plastic, fly ash, and cold mix technology to improve road quality; and
(e) whether the Government is planning to launch a PMGSY Quality Dashboard with real-time data on inspections, quality ratings and grievance redressal, if so, the details thereof?

ANSWER
MINISTER OF STATE IN THE MINISTRY OF RURAL DEVELOPMENT
(SHRI KAMLESH PASWAN)

(a): A total of 27,696 completed works under Pradhan Mantri Gram SadakYojana (PMGSY) have been graded as 'Satisfactory' by State Quality Monitors (SQMs) from the Financial Year 2020-21 to Financial Year 2025-26 (as on 31-7-2025), and thus, successfully

passed in both first-tier and second-tier quality checks, as detailed below:

Financial Year	Completed works graded as 'Satisfactory' by SQMs
2020-21	3,271
2021-22	6,354
2022-23	6,906
2023-24	5,361
2024-25	4,460
2025-26 (as on 31-7-2025)	1,344

State-wise & year-wise details of completed works graded as 'Satisfactory' by SQMs can be accessed at https://omms.nic.in->Quality->Quality Grading Abstract.

(b): Under PMGSY, a road length of 1,66,694 Km has been sanctioned using new/ green technologies, out of which, construction of a road length of 1,24,688 Km has been completed. The details of overall road length constructed and road length constructed using new/ green technologies during Financial Year 2020-21 to Financial Year 2025-26 (as on 31-7-2025) under PMGSY are given below:

Financial Year	Overall road length constructed (in Km)	Road length constructed using new/ green technologies (in Km)
2020-21	36,673	11,202
2021-22	42,004	15,922
2022-23	29,739	16,443
2023-24	26,100	17,945
2024-25	18,111	16,200
2025-26 (as on 31-7-2025)	4,946	4,858

State-wise & year-wise details of road length constructed under various verticals of PMGSY can be accessed at https://omms.nic.in -> Progress Monitoring -> Monthly Progress Report -> Financial Year-wise Achievement. Similarly, State-wise & year-wise details of road length constructed using new/ green

technologies under PMGSY can be accessed at https://omms.nic.in->Proposals->Technology Abstract.

The use of new and green technologies in road construction economises the construction cost of rural roads, while also enabling the effective disposal of various industrial and municipal wastes. This not only saves the environment but also conserves the use of virgin mining materials effectively. Further, it also enhances the execution capacity and reduces the construction period.

(c): The Government accords highest priority to ensuring the quality and durability of rural roads constructed under the PMGSY. The following measures have been taken to ensure the quality and durability of rural roads constructed under PMGSY:

(i) A comprehensive framework has been put in place to ensure that all roads are built to prescribed technical standards and maintained effectively over time. PMGSY roads are constructed based on detailed specifications and guidelines issued by the Indian Roads Congress (IRC) and the Ministry of Rural Development. Designs are vetted at both the State and Central levels to ensure structural integrity and suitability for local terrain and climate.

(ii) Further, a three-tier Quality Monitoring System is in place. At the first tier, quality checks are made by the executing agency at the field level. At the second tier, independent State Quality Monitors (SQMs) inspect all the work at every level. At the third Tier, National Quality Monitors (NQMs) deputed by the Ministry conduct surprise inspections across States to ensure objectivity and compliance. PMGSY uses the Online Management, Monitoring and Accounting System (OMMAS) to track physical and financial progress, including quality inspections. Graded inspection reports from SQMs and NQMs are recorded and monitored in real-time.

(iii) All contractors are legally bound to maintain the roads for five years post-construction under a Defect Liability Period (DLP) clause. Payments are linked to satisfactory maintenance, ensuring accountability and durability.

(iv) The Ministry has promoted the use of innovative and climate-resilient technologies (e.g., waste plastic, cold mix, Full Depth Reclamation, etc.) to enhance the lifespan of roads and reduce

environmental impact. More than 1.24 lakh km of roads have been constructed using such technologies as of July 2025.

(v) Continuous training of engineers, contractors, and quality monitors is undertaken through reputed institutions to strengthen technical competencies in road design, construction, and maintenance.

These measures, taken in a coordinated and systematic manner, have significantly contributed to improving the quality, durability, and sustainability of rural roads constructed under PMGSY.

(d): The Ministry of Rural Development has taken several proactive measures to promote the adoption of new-age, sustainable construction materials and technologies under the PMGSY, with the twin objectives of improving road quality and promoting environmental sustainability. Key steps taken in this regard include the following:

(i) In 2013, the Ministry issued guidelines mandating that a minimum of 15% of the total annual road length in each State be constructed using new and green technologies, including waste plastic, fly ash, cold mix, etc.

(ii) A comprehensive Vision Document was released in 2022 to guide States in mainstreaming innovative materials and techniques. The document promotes the use of many proven technologies, tailored to suit varied geographic and climatic conditions. Some of the approved technologies in use are:

Cold Mix Technology: Enables bituminous road construction without heating, ensuring energy savings and suitability in remote or hilly areas.

Waste Plastic: Used in bituminous roads in surface coats to improve durability and resistance to water-induced damage.

Cement stabilisation: It is a soil improvement technique used in road construction to enhance the strength and durability of weak or poor-quality soils by mixing them with cement.

Full Depth Reclamation (FDR): It is a rehabilitation method that involves recycling of an existing distressed bituminous surfacing

course and its underlying layers into a new, stronger base layer. By this process use of carted stone aggregates can be avoided or very minimal use of carted aggregates used.

Panelled Cement Concrete: It refers to a method of laying cement concrete pavements in defined rectangular or square sections (called *panels*) to control cracking due to shrinkage, temperature changes, or structural loading.

Cell-filled concrete: The compacted sub-grade / sub-base is covered with form work of plastic cells, which ultimately gets filled with concrete to act as pavement. Highly serviceable & maintenance-free pavement is obtained with extremely low cost.

Use of Steel/ Copper Slag: Steel and copper slag can be effectively used in the construction of rural roads, offering both economic and environmental benefits. It can be a sustainable alternative to natural aggregates in road construction.

Use of Jute/ Coir: The use of natural geotextiles like jute and coir in road construction is a sustainable and cost-effective solution for improving soil strength and stability, especially in rural and low-volume roads

Fly Ash: Utilised in sub-grade and embankment construction to enhance strength and reduce environmental impact.

Roads constructed using green technologies are closely monitored for performance. Best practices and case studies are shared across States to encourage wider adoption. As of 31st July 2025, more than 1,24,688 km of road length has been constructed using new and green technologies under PMGSY, contributing to cost savings, longer pavement life, and reduced carbon footprint.

(e): Real-time data of inspections, quality ratings, and grievance redressal is available in the Citizen section of the PMGSY website hosted at https://omms.nic.in under the Quality Grading Abstract and MeriSadak Citizen Feedback System.

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