

**GOVERNMENT OF INDIA  
MINISTRY OF POWER  
LOK SABHA  
UNSTARRED QUESTION NO.3938  
ANSWERED ON 19.12.2024**

**INSTALLATION OF SMART METERS UNDER NSGM**

**3938. SHRI MOHITE PATIL DHAIRYASHEEL RAJSINH:  
PROF. VARSHA EKNATH GAIKWAD:  
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SHRI AMAR SHARADRAO KALE:  
SHRI BHASKAR MURLIDHAR BHAGARE:  
SHRI SANJAY DINA PATIL:  
SHRI NILESH DNYANDEV LANKE:**

**Will the Minister of POWER  
be pleased to state:**

- (a) the objectives and key components of the National Smart Grid Mission (NSGM);**
- (b) the impact of the mission on improving power distribution efficiency in the country;**
- (c) the details of the technologies such as smart meters, advanced metering infrastructure, etc. being implemented under the said mission;**
- (d) the impact of these technologies on energy management and consumption;**
- (e) the details of the total number of smart meters installed across the country under the said mission;**
- (f) the details of the States/cities where smart meters have been most successfully installed;**
- (g) the details of the benefits observed from the installation of these smart meters in terms of accurate billing and energy savings;**
- (h) the key achievements of NSGM in improving grid efficiency and power quality; and**
- (i) the challenges encountered in the implementation of the mission along with the corrective action taken to address the same?**

**A N S W E R**

**THE MINISTER OF STATE IN THE MINISTRY OF POWER**

**(SHRI SHRIPAD NAIK)**

**(a) to (h) : National Smart Grid Mission (NSGM) was established by Government of India (GoI) in 2015 with an objective to plan and monitor the implementation of policies and programs related to Smart Grids in India. NSGM was implemented through NSGM**

**Project Management Unit (NPMU). The scheme stands closed on 31. 03. 2024. The key components of the mission were assistance in formulation of projects including pre-feasibility studies, project appraisal, funding to projects, training and Capacity Building. NSGM contributed to development of Smart Metering ecosystem with indigenous smart meter standard IS16444 and companion standard IS 15959 and Advanced Metering Infrastructure Service Provider (AMISP) bid documents for Capital Expenditure (CAPEX) and Design Build Finance Own Operate Transfer (DBFOOT) models.**

**Under NSGM, Smart Meter projects were implemented using Advanced Metering Infrastructure (AMI) technology which included Smart Metering, Head End System, Meter Data Management System (MDMS) with multiple communication technologies viz. General packet radio service (GPRS)/Radio Frequency (RF) and Power Line Carrier (PLC) etc.**

**Under NSGM, 1,45,343 smart meters were successfully installed in the State of Rajasthan (Baran, Bharatpur, Bundi, Dholpur, Jhalawar and Karauli cities) and 24,214 smart meters in Chandigarh.**

**One of the primary advantages of smart meters is their ability to provide accurate billing information. Smart meters eliminate inaccuracies due to manual reading by automatically recording and communicating the consumption data to the billing system of distribution utility. It helps distribution utilities in automatic energy accounting, improving load forecasting, reducing losses through improved billing and collection, etc.**

**In Ajmer, the project demonstrated benefits of AMI for automatic energy audit and loss reduction analytics which includes energy theft monitoring and tamper alerts. A case study on the pilot project in AVVNL for 1,000 consumers on single feeder for the period of 6 months starting October 2016, highlighted the following benefits to the DISCOM and the consumers:**

- i. Improved customer satisfaction level with accurate billing, real time consumption information, outage notification (with mobile app).**
- ii. Real-time detection and recording of outages, reduced equipment failure-faster fault detection and restoration.**
- iii. Outage time reduction by 20%.**
- iv. Reduction in failure rate of meters by 50%.**
- v. Reduction in failure rate of transformers by 30%.**
- vi. Automation of meter reading and meter punching with smart meter- removes cost of manual reading and punching.**
- vii. Bill Generation Cycle Reduction from 14 Days to 5 Days.**
- viii. Automatic DT wise energy audit identified high loss area for reducing losses.**
- ix. AT&C loss reduction from 20% to 13.5%.**

**(i): AMI, being new technology, there were challenges in availability of sufficient skilled manpower.**

**Gol facilitated capacity building through institutions like Smart Grid Knowledge Centre (SGKC), Manesar to train utility professionals. Around, 475 professional were trained under NSGM.**

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