

GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
**RAJYA SABHA**  
**UNSTARRED QUESTION No. 1400**  
ANSWERED ON 31/07/2025

**CARBON CAPTURE AND UTILIZATION TESTBED**

1400 # SHRI HARSH MAHAJAN:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) whether Government has established any national testbed for research and testing of Carbon Capture and Utilization (CCU) technology;
- (b) if so, the details of its location, operational framework and key objectives; and
- (c) the manner in which this testbed will support reduction of carbon emissions in Indian industries, promote innovation, and help achieve green energy targets?

**ANSWER**

MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE  
MINISTRY OF SCIENCE AND TECHNOLOGY & EARTH SCIENCES  
(DR. JITENDRA SINGH)

- (a) Yes Sir, the Department of Science & Technology (DST) has supported the establishment of two test beds in the country for research and testing of Carbon Capture and Utilization (CCU) technologies.
- (b) The location-wise details including operational framework and key objectives of the supported CCU test beds are as given below:

Sr. No.	Location of CCU Testbeds	Operational Framework	Key Objectives
1	Pune, Maharashtra	<b>Technology Designer:</b> Indian Institute of Technology, Delhi  <b>Technology Provider:</b> Thermax Limited, Pune	• Development and deployment of an indigenously developed integrated technology of Carbon dioxide (CO <sub>2</sub> ) capture from an existing Coal-to-Methanol pilot facility and its conversion to Methanol.
2	Hyderabad, Telangana	<b>Technology Designer:</b> CSIR-Indian Institute of Chemical Technology, Hyderabad  <b>Technology Provider:</b> Bharat Heavy Electricals Limited (BHEL) Corporate R&D, Hyderabad	• Development and deployment of the carbon capture technology from the existing coal gasification facility and its conversion to Dimethyl Ether (DME).

- (c) With the view to demonstrate reduction of carbon emissions in Indian industries, these CCU test beds aim to capture carbon emissions and promote innovation by converting captured Carbon dioxide (CO<sub>2</sub>) into value added fuels such as Methanol and DME. The test beds are also envisioned to provide critical data and operational insights needed to scale up the CCU technologies to commercial level, thereby enabling industries to go a long way towards decarbonisation and attainment of green energy targets.