GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 1674
ANSWERED ON 30/07/2025

CARBON CAPTURE UTILISATION

†1674. SMT. SHOBHANABEN MAHENDRASINH BARAIYA:
SHRI CHAVDA VINOD LAKHAMSHI:

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

(a) the objectives and importance of Carbon Capture Utilisation (CCU) test beds initiative;

(b) whether the Government has set up five CCU testing centres (Test beds) in the country;

(c) if so, the details of the specific geographical position and partner institutions of these testing centres; and

(d) whether these testing centres are part of public-private partnership model in integrating educational institutions and cement industries and if so, the details thereof?

ANSWER
MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES
(DR. JITENDRA SINGH)
विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान मंत्रालय के राज्य मंत्री (स्वतंत्र प्रभार)
(डॉ. जितेंद्र सिंह)

(a) The objectives and importance of Carbon Capture Utilisation (CCU) testbeds is to capture carbon dioxide (CO_2) emission from industrial point sources in hard-to-abate sectors and convert it into value-added products like synthetic fuels, urea, concrete aggregates, and food-grade CO_2. These testbeds are going to act as a platform for validating and deploying CCU technologies at small scale in real industrial settings through Industry-Academia collaborations. This initiative is important to enable industrial decarbonisation in the country with special focus on emissions-intensive sectors like coal

gasification plants and cement by promoting circular carbon economy, thereby aligning well with India's overarching target of Net-Zero by 2070.

(b) The Department of Science and Technology (DST) has supported the establishment of two Test beds in the country for research and testing of CCU technologies in the coal gasification facilities.

(c) The details of the specific geographical position and partner institutions of the two supported test beds are provided in the table below:

Sl. No.	Geographical position	Partner Institutions	
		Academia	Industry
1.	Pune, Maharashtra	Indian Institute of Technology, Delhi	Thermax Limited, Pune
2.	Hyderabad, Telangana	CSIR-Indian Institute of Chemical Technology, Hyderabad	Bharat Heavy Electricals Limited (BHEL) Corporate R&D - Hyderabad

(d) These two supported CCU test beds operate in Public-Private Partnership (PPP) mode, integrating academic institutions as technology designers and thermal power industries as technology providers. Additionally, an Expert Panel constituted by DST has recommended setting up five CCU test beds in the country in PPP mode, integrating academic institutions as technology designers and cement industries as technology providers, with financing shared between DST and respective cement industry partners at a ratio of 3:1 of the total project cost.

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