

GOVERNMENT OF INDIA
MINISTRY OF COAL

LOK SABHA
UNSTARRED QUESTION NO. 5308
ANSWERED ON 25.03.2026

CLEAN COAL TECHNOLOGY

†5308. SHRI IMRAN MASOOD:

Will the Minister of COAL be pleased to state:

- (a) whether the Government has implemented any new policy in the year 2025-26 to reduce carbon emissions from coal-based thermal power plants;
- (b) if so, the details of the provisions made under this policy for the utilisation of clean coal technology;
- (c) whether the Government is conducting research projects to promote Carbon Capture and Utilization (CCU) technologies;
- (d) if so, the current status of the said research projects;
- (e) whether the Government is providing financial assistance to make thermal power plants compliant with environmental standards; and
- (f) if so, the details thereof

ANSWER

MINISTER OF STATE FOR COAL AND MINES
(SHRI SATISH CHANDRA DUBEY)

(a) & (b): Government has continued to implement various measures to reduce carbon emissions from coal-based thermal power plants through adoption of cleaner and more efficient technologies. These include promotion of supercritical and ultra-supercritical technologies, renovation and modernization of existing units, biomass co-firing and compliance with environmental norms notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC).

Further, in line with the Budget Speech (2026-27) related to Carbon Capture Utilization and Storage (CCUS), technologies at scale will achieve higher readiness levels in end-use applications across five industrial sectors, including, power, steel, cement, refineries and chemicals which are amongst the largest contributors to CO₂ emissions in India. An outlay of Rs. 20,000 crore has been proposed in the scheme over the next 5 years. Under the proposed CCUS Mission, the projects have been categorized into three categories viz. R&D, Pilot and Sizeable. These projects are proposed taking into account the development of each technology area viz. capture, storage and utilization.

(c) & (d): The Ministry of Coal is promoting Research and Development in carbon capture and Utilisation (CCU) technologies through coal PSUs and premier research institutions.

The following R&D projects, focused on conversion of CO₂ into value-added products such as methanol, are undertaken by coal PSUs and other PSUs:

- A project on scaling up conversion of CO₂ to methanol (500 kg CO₂/day capacity) has been taken up for implementation by Coal India Limited (CIL). Further, an MoU has been signed by CIL with Indian Institute of Technology Hyderabad for a CCUS project, which is currently at a preliminary stage.
- A pilot project on CO₂-to-methanol conversion has been taken up by SCCL at thermal power plant level in collaboration with Jawaharlal Nehru Centre for Advanced Scientific Research and Breathe Applied Sciences Pvt. Ltd. The erection works have been completed and trial operations are under progress. This project aims to demonstrate feasibility for replication across power plants in the country.
- NLC India Limited has entered into an MoU with Indian Institute of Technology Madras for lab-scale research on carbon capture technologies. Under this MoU, work on electrochemical CO₂ capture and chemical absorption using ionic liquid-amine blends is currently under progress.
- NTPC Ltd. has undertaken initiatives in the field of Carbon Capture and Utilization (CCU) through pilot and demonstration projects. A 10 Metric Tonnes Per Day (TPD) Carbon Dioxide (CO₂)-to-Methanol conversion plant has been commissioned at NTPC Vindhyachal, Madhya Pradesh, with an annual production capacity of 6,000 Metric Tonnes (MT). Further, NTPC has taken up the following pilot projects under Carbon Capture and Utilization domain:

S.No	Project Name	Status
1	3,000 TPA Fuel Gas CO ₂ to Gen-4 Ethanol project at Pudimadaka, Andhra Pradesh	Under execution
2	Carbonated Fly Ash Brick (C-brick) Plant of 2 Lakh CBrick/Day at NTPC Ramagundam, Telangana	Under execution
3	1,800 TPA Fuel Gas CO ₂ to Sustainable Aviation Fuel (SAF) project at Pudimadaka, Andhra Pradesh	Under execution

(e) & (f): No such financial assistance is being provided by the Ministry of Power.
