

GOVERNMENT OF INDIA
MINISTRY OF COAL

RAJYA SABHA
STARRED QUESTION NO. *254
TO BE ANSWERED ON 24.03.2025

SUSTAINABLE COAL MINING PRACTICES

***254 Shri Pramod Tiwari:**

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

- (a) steps taken for aligning coal mining practices with global sustainability goals including reducing carbon emissions;
- (b) steps taken to implement state-of-the-art technologies in coal mining operations; and
- (c) development of robust mechanisms for mine closures?

ANSWER

MINISTER OF COAL AND MINES
(SHRI G. KISHAN REDDY)

(a) to (c): A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (A) TO (C) IN RESPECT OF RAJYA SABHA STARRED QUESTION NO. *254 FOR 24.03.2025 ASKED BY SHRI PRAMOD TIWARI, HON'BLE MP, REGARDING "SUSTAINABLE COAL MINING PRACTICES".

(a) The Ministry of Coal is monitoring sustainable development activities undertaken by the coal companies, aligned with global sustainability goals, particularly the United Nations Sustainable Development Goals (SDGs). Key activities include:

(i) Energy Efficiency Measures and Reducing Carbon Emissions (SDG 7 – Affordable and Clean Energy, SDG 13 – Climate Action): Coal/Lignite PSUs have been taking various energy conservation and efficiency measures to reduce carbon intensity and energy consumption such as the replacement of conventional lights with LED lights, installation of energy-efficient air conditioners, super fans, deployment of electric vehicles, First Mile Connectivity (FMC) projects and installation of efficient water heaters, energy-efficient motors for pumps, auto timer in street lights etc.

(ii) Afforestation (SDG 15 – Life on Land): Coal/Lignite PSUs have been actively undertaking extensive afforestation and reclamation of mined-out areas to restore biodiversity and ecological balance. Progressive mine closure plans and scientific land reclamation are being implemented to rehabilitate natural ecosystems effectively to ensure compliance with environmental norms. Through sustained efforts in reclamation and afforestation, Coal/Lignite PSUs are consistently working to minimize the environmental footprint of coal mining operations and enhance the ecological health of areas surrounding their mines.

(iii) Water Conservation and Utilization (SDG 6 – Clean Water and Sanitation): Treated mine water, after the application of appropriate treatment methods, is being effectively utilized for various purposes, including domestic and irrigation supply to local communities, industrial use for dust suppression, firefighting, machinery washing, and sprinkling in underground workings. It is also used for creating recreational areas, supporting fish farming, and contributing to groundwater recharge. Additionally, rainwater harvesting structures and groundwater recharge systems have been constructed in coal mining areas to enhance water conservation and sustainable resource management.

(iv) Waste Management and Circular Economy (SDG 12 – Responsible Consumption and Production): Coal/Lignite PSUs have been actively engaged in extracting sand from Overburden (OB) for use in construction and as stowing material, contributing to sustainable development by providing an affordable alternative to natural sand and reducing the land required for OB dumps. This initiative helps mitigate environmental pollution, improves the riverine ecosystem, enhances water flow, and supports groundwater recharge. By promoting the production of sand from overburden material, Coal/Lignite PSUs are reducing environmental impact and advancing circular economy practices while supporting infrastructure development.

Further, the Coal Block Development and Production Agreement for commercial mining executed between Successful Bidder and Nominated Authority mandates that the Successful Bidder shall implement mechanised coal extraction, transport and evacuation in the coal mine, in line with modern and prevalent technologies. Accordingly, the Successful Bidder shall strive to minimise the carbon footprints from operations at the coal mine, undertake steps to reduce environmental pollution and promote sustainability, in accordance with Good Industry Practice.

(b) The Government has adopted new technologies in mining operations for modernization of coal sector. Government has launched a Technology Roadmap for the coal sector with the objective to implement new technologies and build up digital infrastructure to support current and future mechanisation and modernization of the coal mines. The main focus is to bring blast free technology in both Underground & Opencast mines and introduction of Continuous Miner, Longwall, Highwall and Surface Miner technologies by identification of mines where geo-mining conditions permits use of such technologies. The main thrust behind these technologies is enhancement of a safer work environment, increased coal recovery and greater efficiency. Other areas identified for introduction of new technologies are transportation, communication, digitization, safety, environment and sustainability etc.

(c) Mine closure plan is an integral part of the project report for Coal mines. The goal is to achieve coal production target sustainably and ensure land usage for future generations after final closure of the mine. In compliance of the Mine closure guidelines issued by Ministry of Coal, mines are operating with approved Mine Closure Plans. Mines have been scientifically closed in accordance with the Mine Closure Guidelines. This closure process ensures both environmental sustainability and adherence to statutory regulations. As stipulated in Mine Closure guidelines, biological reclamation, development of green belt, Air and Water and other environmental Quality management etc. is carried out during the operational period of the mine as well as during the post closure period of the mine. Compliance of closure activities as per the guideline is checked by empanelled third party agency and verified by the regional office of the Coal Controller's Organization (CCO) at periodic intervals.
