

GOVERNMENT OF INDIA  
MINISTRY OF COAL  
RAJYA SABHA  
**UNSTARRED QUESTION NO. 2430**  
**ANSWERED ON 08.08.2022**

**Environmental impact of coal mining**

**2430. Smt. Vandana Chavan:**

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

- (a) the details of actual environmental impact of coal mines on neighbouring villages/settlements and whether the people residing there have been provided adequate compensation;
- (b) the details of works done for reduction of detrimental environmental impact of coal mining in the past three years, State-wise;
- (c) the details of funds allocated, released, and spent for reducing environmental impact of coal mining in the past three years, State-wise;
- (d) whether there has been any delay in release of allocated funds, if so, the reasons therefor; and
- (e) the details of proposed/in-progress projects for reduction of environmental impact, State-wise?

**ANSWER**

**MINISTER OF PARLIAMENTARY AFFAIRS, COAL AND MINES**  
**(SHRI PRALHAD JOSHI)**

(a): Coal mining works are a site specific activity and may cause various impacts which can be ameliorated by taking necessary ameliorative measures. The impacts are mainly –

- Pollution in various forms - Air, Water, Noise and land pollution.
- Generation of airborne dust from drilling, blasting, excavation, road transportation etc.
- Impact on surface drainage pattern & water quality,
- Impact on ground water regime & water quality.
- Impact on land

The Environment Impact Assessment (EIA) Report is prepared for all coal mines, wherein the Environmental Impact for Air, Water, Land, etc are determined. The Environment Management Plan (EMP) is prepared and approved by MoEF&CC for mitigating any impacts of mining activity on nearby villages/settlements and is implemented by CIL Subsidiaries so that environmental impact on neighbouring villages/settlements can be minimized to the maximum extent.

People residing around coal mines are getting benefitted through the various development activities undertaken in those areas as part of Corporate Environmental Responsibility. As such provision of adequate compensation to local residents is ensured by providing assistance in supporting basic amenities like schools, diploma/ITI Training, dispensary aid hospitals under CSR activities.

Some coal companies are providing mine water for drinking and domestic use after treatment. Furthermore, various ponds are dug, solar lights have been installed along with development of eco parks in ecologically restored mined out land. In addition, job opportunities are created at coal mines and other ancillary industries established due to mining activities.

(b): The details of works done for reduction of detrimental environmental impact of coal mining are as under-

#### Coal India Limited (CIL) -

Coal India Limited (CIL) and its Subsidiaries operate across eight states in India, i.e. Jharkhand, West Bengal, Madhya Pradesh, Chhattisgarh, Odisha, Maharashtra, UP and Assam. In order to reduce the pollution, projects of CIL undertake following pollution control measures regularly-

#### Air Pollution Control Measures -

- i. Under CIL's flagship 'First Mile Connectivity (FMC) Projects', 44 Projects have been identified for implementation in two phases which will increase the mechanized coal transportation and loading system. FMC Projects will help increase mechanized evacuation from the current 151 MTPA to 622.5 MTPA which will substantially reduce road transportation, i.e. dust and vehicular pollution. Out of the planned 35 FMC Projects in the first phase, 6 projects have been commissioned till date with a total capacity of 82 MTPA. The total capital investment in 1st phase is INR 10,750 Crore.
- ii. Environment friendly mining technologies are being used and encouraged. For coal Surface miners are being used extensively and for over burden, xcentric rippers are being used.
- iii. Installation of fixed type Sprinklers/ fog canons at/ along/ around the dust generating sources viz. Stock yard, Railway siding, Coal Handling Plants etc.
- iv. Mobile fog canons and Water Sprinklers of different capacities are also deployed along transportation roads and haul roads.
- v. In addition, mist sprinklers are also installed at various transfer points along conveyor route in Coal Handling Plants, bunkers etc.
- vi. In order to prevent dust generation during coal transportation, the roads are concreted & black-topped, coal carrying trucks are optimally loaded and covered with tarpaulin. Further, avenue plantation is also carried out.
- vii. Concurrently with mining activities, green belt development and afforestation (plantation) is also carried out.
- viii. Continuous Miner are being used in UG mining reducing need of drilling and blasting, further it is also fitted with automatic spraying system which reduces the dust generation at source itself.
- ix. In underground mines, ventilation ducts are regularly maintained along with belts and rollers. This avoids avoid spillage of coal and restrict generation of dust.

#### Water Pollution Control Measures -

- i. Wherever and to the extent possible, the mines are operated on zero discharge
- ii. Mine discharge water is stored in huge sump which acts a water harvesting structure.
- iii. For mine discharge, pumped out mine water is treated through sedimentation prior to its discharge.
- iv. Effluent treatment plants are set up in workshops.
- v. Effluent from residential colonies is also treated through conventional means as well as designated Sewage Treatment Plants (STPs) in townships.
- vi. Effluent water quality monitoring as per set standards is undertaken and results submitted to statutory authorities.

#### Land Reclamation-

- i. For reclamation, plantation in the mining areas covering the external OB dump as well as the reclaimed land is carried out through State Forest Development Corporations as per the provisions made in the approved EIA/EMPs. The density of plantation is 2500 sapling per ha.

In last three years (FY 2020 - FY 2022) CIL Subsidiaries have carried out plantation in 3125 Ha land planting 69.8 lakh saplings.

- ii. Till date, Coal India has commissioned 27 Eco-restoration, Eco Parks and Eco-Tourism Projects, out of which seven eco parks have been developed in last three years (i.e. FY 2020-FY 2022).
- iii. Green cover and reclamation activity in mining area is being monitored through satellite.

#### Noise Pollution Control Measures -

- i. All machines and equipment are being properly maintained. Sound muffler system and bearing lubricating system etc. of equipment is kept in proper condition.
- ii. The workers exposed to high noise level are provided with earplugs/ earmuffs.
- iii. The workers are subjected to Periodic Medical Examination as per set statutes.
- iv. In addition Ambient Noise Level Monitoring on fortnightly basis is carried out in and around every operating mine.

#### Singareni Collieries Company Limited (SCCL) -

Singareni Collieries Company Limited (SCCL) is operating mines in Telangana State only. The details of the measures taken by SCCL in Telangana State in the last three years for safeguarding the environment are as below:

- In order to control air pollution, SCCL has made adequate water spraying arrangements at mines and mist spray arrangements at coal handling plants.
- Mobile water sprinklers were used in opencast mines for dust suppression on haul roads and coal transport roads.
- Control blasting techniques using non-electric delay detonators were adopted in opencast mines so as to control noise and blast vibrations.
- Coal transport trucks were covered with tarpaulin sheets during coal transportation for prevention of spillage and resultant dust pollution.
- SCCL is implementing biological engineering techniques for the reclamation of overburden dumps. The objective of these techniques is to transform the waste and degraded land created due to mining operations into a sustaining ecological landform which will also prevent soil erosion, siltation of water bodies, water pollution, dust pollution and re-create the aesthetic beauty of the environment.
- The mine and colony effluents were treated in ETPs and STPs respectively and the treated water was used for various purposes like dust suppression and plantation.
- Excess mine discharge water was channeled through slow sand filter beds/settling ponds before discharging in to nearby tanks/streams for agricultural purpose which helps in raising of two crops in a year by surrounding villagers and also aids in augmentation of ground water levels.
- De-silting of nearby tanks was also taken up so as to increase the water storage capacity.
- SCCL raised species of native saplings on a large scale in its own nurseries so as to take up massive plantation in all its mining areas on an annual basis.
- SCCL has done extensive plantation on OB dumps, vacant lands etc., in the mines as per the approved Environment Management Plans (EMPs). Apart from the plantation to be taken up under EMP, SCCL has taken up plantation in:
  - i. Degraded forest lands of surrounding area with concurrence of State Forest department.
  - ii. The surrounding villages with free distribution of saplings to public.
  - iii. Along the approach roads/routes leading to surrounding villages.

During last three years i.e., 2019-2021, more than 1.16 crore saplings are planted in 2041 Ha area apart from 0.50 crore free distribution.

- SCCL established 219 MW solar power plants in all the mining areas in a phased manner out of the planned 300 MW as a part of its efforts for harnessing renewable sources of energy.
- Processed overburden (POB) and bottom ash were used in place of sand for stowing operations in UG mines. Presently, 38 % PoB and 45% Bottom ash is being utilized for fulfilling the stowing requirement.
- SCCL developed eco-friendly colonies by providing modern sewage treatment plants, waste disposal arrangements, development of parks and gardens, greenbelt in and around the colony, roof-top solar panels etc.,
- SCCL has taken up various socio-economic measures in coal mining areas by allocating funds under CSR and DMFT for overall development of the region.
- The environmental monitoring was carried out in and around the coal mining projects through a CPCB recognized NABL accredited laboratory and necessary pollution mitigation measures were implemented.
- Mine closure activities were taken up as per mine plan and mine closure plans approved by the Ministry of Coal.
- SCCL is complying with various Environmental Acts, Rules for protection of environment and Environment Management Committees have been formulated at each project for monitoring the implementation of environmental norms/conditions.
- The conditions stipulated in Environment clearances, Consent for Operations and other statutory clearances in the field of environment In addition for protection of environment and compliance reports are being submitted to regulatory agencies on periodical basis.
- The environmental monitoring is being carried out in and around the coal mining projects through a CPCB recognized NABL accredited laboratory and necessary pollution mitigation measures are being implemented.

#### NLC India Limited (NLCIL) -

In NLC India Limited, the following measures have been taken at Talabira II & II OCP (Odisha) to reduce the detrimental impact of environment:

- The Ambient air quality monitoring stations are located at 9 locations covering Core and Buffer zone of Talabira II & III OCP. Ground water Quality & Surface water quality monitoring station is located at 2 locations. Ambient noise at 5 locations covering Core and Buffer zone in project affected villages of Talabira mines are being monitored. The monitoring reports for Ambient Air Quality, Ground water Quality, Surface water quality and ambient noise are being submitted to State Pollution Control Board every month. The results of monitoring reports for Ambient Air Quality, Ground water Quality, Surface water quality and ambient noise level are within the prescribed limits. Beside this 2 numbers of online CAAQMS has been installed and real time data transmission connectivity has been established with OSPCB server.
- With the scientific mining methodology, Talabira II & III OCP is taking all the steps to protect and conserve the environment proactively.
- To control the generation of dust, the following measures are being taken:-  
 (i) Coal excavation is being carried by blast free technology using Surface Miner equipped with Dust suppression system. Wet Drilling is being carried out.(ii) Based on the scientific study by M/s. Central Institute of Mining & Fuel Research (CIMFR), Dhanbad, Controlled blasting is being carried out for OB removal. (iii) Fog cannon has been deployed at Coal stockyard.(iv) Four numbers of water sprinkling tankers are deployed in the haulage roads and working pit of the mine for dust suppression. (v) Vehicle speed is being restricted within 20km/hr inside the mine;
- ETP has been installed for the treatment of vehicle washing water
- Hazardous waste is being stored under cover shed with impervious flooring and the waste is being disposed through SPCB authorized agency only

- Plantation in the Core and Buffer zone of mining lease

(c): Details of expenditure incurred by CIL/SCCL/NLCIL during last three years (FY 2020 - FY 2022) on Environmental measures is as below-

<b>Subsidiary</b>	<b>State</b>	<b>Expenditure (In Cr Rs)</b>
ECL	West Bengal, Jharkhand	19.59
BCCL	Jharkhand	14.6
CCL	Jharkhand	19.21
MCL	Odisha	79.35
NCL	Madhya Pradesh, Uttar Pradesh	76.02
SECL	Chhattisgarh, Madhya Pradesh	245.51
WCL	Maharashtra, Madhya Pradesh	114.23
NEC	Assam	7.96
SCCL	Telangana	929.70
NLCIL	Odisha	2.81 (2019-20 & 2020-21)

(d): There has not been any delay in release of allocated fund.

(e): The details proposed / in-progress projects for reduction of environmental impact are as under-

(i) Coal India Limited has identified 44 Projects FMC projects for implementation in two phases which will increase the mechanized coal transportation and loading system. This will help to increase mechanized evacuation from the current 151 MTPA to 622.5 MTPA which will substantially reduce road transportation, i.e. dust and vehicular pollution. CIL has also planned development of 35 new eco parks along with 3 expansion eco parks, which are expected to be completed by FY 2025-26. Further, CIL has carried out plantation over an area of 1468 Ha in FY 2021-22 and envisages to increase it continuously in future. Additionally CIL Subsidiaries comply with the Environmental Clearance conditions which have been stipulated by MoEF&CC and CTE/CTO conditions which are stipulated by State Pollution Control Boards.

(ii) SCCL is taking following measures for reduction of environmental impact:

- Adoption of Surface Miner Technology in few OC mines to avoid blasting operations.
- Erection of Wind Shields/Vertical Green Barriers, Fog canons in the CHPs for dust control.
- Procurement of e- vehicles on trial basis.
- Establishment of remaining 80 MW solar plants.
- Implementation of Energy Efficiency measures such as LED lights, Energy Efficient ACs, Super Fans, Efficient water heaters etc.,

(iii) NLC India Limited is taking required Environmental pollution control measures for control of environmental impact in Talabira II & III OCP. Following project implementation is under progress -

- Installation of Wheel washing system and automatic sprinkling system
- Plantation in the Core and Buffer zone of the mining lease.

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