

PREFACE

This Report of the Comptroller and Auditor General of India contains the results of the performance audit of the activities of Corporate Social Responsibility undertaken by Coal India Limited during the period from April 2004 to March 2010.

Executive Summary

Coal India Limited (CIL) is one of the largest coal producing companies in the world with a total production of 431.32 million metric tonnes of coal in 2010-11. CIL has eight wholly owned subsidiaries.¹ As of March 31, 2011, it operated 470 mines in 21 major coalfields across eight states in India, including 164 open cast mines, 275 underground mines and 31 mixed mines (includes both open cast and underground mines).

Coal mining raises serious environmental and social concerns, including soil erosion, dust, noise and water pollution, and impact on local biodiversity. The environmental and social issues associated with coal exploration and production such as displacement are of special nature as the coal reserves are located in river basins such as Damodar, Barakar, Sone, Wardha, Bramhani, Mahanandi, etc. which are rich in forest cover and are habitats of precious wildlife and indigenous tribal communities. CIL and its subsidiaries being profit making companies have sufficient resources to discharge its responsibilities towards environment management, resettlement and rehabilitation of displaced persons, community and peripheral development.

The performance audit of the CIL and its subsidiaries was conducted with a view to assess whether the companies were able to fulfill their corporate social responsibilities (CSR) in an effective and efficient manner towards environmental protection, safety requirement, occupational health of the workers and community and peripheral development. A total of 18 open cast mines, eight underground mines and four washeries in seven coal producing subsidiaries, selected on random sampling; were reviewed in audit.

Significant audit observations are discussed below.

CSR Policy Framework:

CIL has adopted a comprehensive CSR policy with effect from December 2009. However, to reap the benefits of the policy, the company needs to implement it effectively by ensuring adequate allocation of funds and setting up measurable targets. Allocation of funds for community and peripheral development was below the norms of ₹ one per tonne of coal produced in five out of seven coal producing subsidiaries. In fact, the budget allocation of ₹ 211.80 crore for community and peripheral development during the period 2004-10 was only 0.7 per cent of the aggregate net profit of ₹ 31,062.36 crore of CIL over the same period. Even the allocated amount was not fully utilized as the utilisation of funds (₹152.96 crore) during the period 2004-10 fell short of budgeted allocation (₹ 211.80 crore) in all the subsidiaries and was least in MCL (46 per cent) followed by NCL (53 per cent) and CCL (65 per cent) thus, allowing their CSR activities to remain unfulfilled. The companies were not carrying out any need assessment survey in the periphery to assess the requirements of the society and were also not assessing the impact of their CSR activities on the society.

Environmental Issues:

Coal is extracted predominantly through open cast mining which disfigures the countryside and tends to pollute the atmosphere within the locality. On the other hand, land subsidence may

¹ Bharat Coking Coal Limited (BCCL), Central Coalfields Limited (CCL), Central Mine Planning and Design Institute Limited (CMPDIL), Eastern Coalfields Limited (ECL), Mahanadi Coalfields Limited (MCL), Northern Coalfields Limited (NCL), South Eastern Coalfields Limited (SECL) and Western Coalfields Limited (WCL). All the subsidiaries except CMPDIL produce coal.

occur as a result of underground mining, if appropriate precautionary measures are not taken. Consequently, protection of environment in terms of reclamation of land, dust suppression, treatment of effluent and sewage, disposal of slurry and rejects and impact on ground water level due to mining assumes great significance.

- Audit observed that there was a backlog in backfilling and technical reclamation of 12,643 hectare land in seven subsidiaries of the Company as on 31 March, 2010. The backlog increased in five out of seven coal producing subsidiaries.
- Out of 18 open cast mines covered in Audit; topsoil was found preserved only in five mines, density of tree plantation was found satisfactory (more than 2500 plants per hectare) in only eight mines;
- There was no effluent treatment plant in two mines and four mines did not have sewage treatment plant. Out of 10 areas in Northern Coalfields Limited, rainwater harvesting had started in only four areas. Similarly, Mahanadi Coalfields Limited had started roof top rain water harvesting in residential and non-residential buildings in four open cast projects. Thus, only a handful of projects had the rain water harvesting arrangement.
- Out of 239 mines in CIL, which existed prior to 1994, 48 open cast mines, 170 underground mines and 21 combined mines were found to be working without environmental clearance.
- Environment Management System enables an organisation to evaluate and continually improve its environmental performance and operating efficiency. As of March 2011 only 71 out of total 629 units of CIL had got Environment Management System certification i.e. ISO 14001 accreditation.

In essence, CIL and its subsidiaries have taken initiatives in areas impacting environment. However, activities like backfilling, land reclamation, preservation of topsoil and plantation of trees and other environmental issues need to be identified so that CIL's vision of increasing coal production from 324 million tonnes in 2004-05 to 782 million tonnes in 2024-25 is achieved. The Company was also lagging behind in taking prior environment clearance for mines. The Company should take early action to construct Effluent Treatment Plant at the earliest and the subsidiaries should make continuous efforts to keep the level of the quality of effluent in the water discharged from the mines within the norm to avoid adverse effect of these chemicals.

Safety Issues

- Mine safety including safety in stacking of overburden is a significant safety issue. In 10 out of 18 open cast mines selected in sample, there were cases of violation of safety parameters such as excess height and gradient of overburden dumps.
- Though the number of fatal accidents, number of fatalities and number of serious accidents showed decreasing trend but it was not able to achieve the zero harm target.
- Initial and periodical medical examinations were being done for the company employees. However, only 1.58 per cent to 7 per cent of contractors' employees underwent medical examination, although mandatory.

This performance audit report contains seven recommendations to help the companies to improve their performance in discharge of corporate social responsibilities. These were accepted by Ministry of Coal, Government of India.

Significant recommendations are:

- *CIL and its subsidiaries should evolve a mechanism to set up measurable targets with timeline so that performance on CSR activities can be monitored effectively.*
- *CIL and its subsidiaries should plan and spend constructively on community and peripheral development after assessing the needs of the society.*
- *Topsoil should be preserved at earmarked sites without violating guidelines of Ministry of Environment and Forests and proper record of its storage and use should be maintained.*
- *In order to arrest depletion of ground water level as a result of coal mining, subsidiaries may take up rainwater harvesting.*
- *Independent safety audit of every mine should invariably be conducted at a frequency of two years as suggested by the safety committee of CIL.*
- *All subsidiaries may maintain computerized database of medical history of employees as is being done in NCL for effective medical care.*

Chapter 1

Introduction

1.1 Corporate Social Responsibility

Public sector enterprises have legal responsibilities to maximize shareholder profits; but a shift in corporate mindset led by social expectations and pressure is causing business leaders to rethink their responsibilities with respect to corporate performance measured in terms of economic impact, social impact and environmental impact—commonly called the **Triple Bottom line**.

The Corporate Social Responsibility (CSR) is seen as a concept in which companies voluntarily integrate social and environmental concerns into their operations. The idea of being a socially responsible company means doing more than comply with the law by taking concrete measures to address environmental and social concerns. Corporate Social Responsibility (CSR) is a concept whereby organisations serve the interests of society by taking responsibility for the impact of their activities on customers, employees, shareholders, communities and the environment in all aspects of their operations.

Coal is the only natural resource and fossil fuel available in abundance in India. The major environmental challenges encountering the coal industry are impacts of mine fires, dust suppression and control particularly haul road dust consolidation, treatment of mine waters containing heavy metals/acid mine drainage, restoration of water table and quality of ground and surface water, augmentation of pumped out mine water for drinking purpose, reclamation of mined out areas with pre-determined land use patterns conducive to the local populations etc. The problem of mining-induced displacement and resettlement (MIDR) poses major risks to societal sustainability.

Coal mining and the nature of operations and working conditions involved raise serious environmental and social concerns. The environmental and social issues such as displacement are of special nature as the coal reserves are located in river basins such as Damodar, Barakar, Sone, Wardha, Bramhani, Mahanandi, etc. which are rich in forest cover and are habitats of precious wildlife and indigenous tribal communities. **Mining operations damage the environment and ecology to an unacceptable degree, unless carefully planned and controlled. Therefore, there is a need for balance between mining and environmental requirements. Further, the problem of mining-induced displacement and resettlement poses major risks to social sustainability. Therefore, the coal mining companies have a special responsibility towards environment protection and social development.**

Coal India Limited and its subsidiaries (Company), being coal mining companies are expected to bear significant responsibilities towards environment management, resettlement and rehabilitation of displaced persons, community and peripheral development and safety and welfare of its employees.

1.2 Company Profile

Coal India Limited (CIL) a 'Navratna' Public Sector Undertaking under Ministry of Coal, Government of India produces non-coking coal and coking coal of various grades for diverse applications. As of March 31, 2011, it operated 470 mines in 21 major coalfields across eight states in India, including 164 open cast mines, 275 underground mines and 31 mixed mines (includes both open cast and underground mines). CIL is one of the largest coal producing companies in the world with a total production of 431.32 million metric tonnes during 2010-11. CIL has eight wholly owned subsidiaries¹.

During the year 2010-11, CIL recorded gross sales of ₹ 60,245.21 crore with profit after tax of ₹ 10,867.35 crore. Being a profit making company; CIL has sufficient resources to discharge its responsibilities towards environment, safety and social development.

1.3 Organisational Setup

The Board of Directors of CIL consists of five functional directors including the Chairman. Subsidiaries have their own board of directors comprising of the Chairman cum Managing Director (CMD) and other directors. Subsidiaries are divided into administrative areas headed by General Managers (GMs), comprising of one or more projects, headed by Project Officers.

A Corporate Social Responsibility wing, looking after the community and periphery development, employees' welfare and other welfare activities, functions under the Director (Personnel) in CIL as also in the subsidiaries.

¹ Bharat Coking Coal Limited (BCCL), Central Coalfields Limited (CCL), Central Mine Planning and Design Institute Limited (CMPDIL), Eastern Coalfields Limited (ECL), Mahanadi Coalfields Limited (MCL), Northern Coalfields Limited (NCL), South Eastern Coalfields Limited (SECL) and Western Coalfields Limited (WCL). All the subsidiaries except CMPDIL produce coal.

Chapter 2

Audit Framework

2.1 Scope of Audit

Performance audit of activities under Corporate Social Responsibility in CIL and its subsidiaries was undertaken for the period 2004-05 to 2009-10 to review these activities with reference to impact on the environment, safety in mining, health care of workers and community and peripheral development. These issues are of great significance to areas of operations of CIL and the adjoining areas, given the nature of mining operations and the working conditions involved. For this purpose, the corporate offices of CIL and its subsidiaries and 18 open cast mines, eight underground mines and four washeries in seven coal producing subsidiaries, viz., BCCL, CCL, ECL, MCL, NCL, SECL and WCL, were reviewed in audit. The details of the sample selected and selection criteria are given in **Annexure - 1**.

2.2 Audit Objectives

The objectives of the performance audit were to assess whether

- the companies have formulated CSR policy which adequately addresses CSR concerns and whether these have provided adequate resources for CSR activities;
- adequate measures were taken by CIL and its subsidiaries to minimize adverse impact on the environment in course of mining;
- safety practices prevailing in the companies conform to the norms/standards, rules prescribed; and
- the companies have been able to fulfill their social responsibility in an effective and efficient manner towards health care to workers, community and peripheral development, rehabilitation and resettlement.

2.3 Audit Criteria

The main criteria used by audit to assess the performance of the companies were as follows:

- Ministry of Environment and Forest (MoEF) guidelines,
- Directorate General of Mines Safety (DGMS) guidelines,
- CSR policy of CIL,
- Conditions imposed by MoEF/DGMS in respect of individual projects.

The details have been provided in the **Annexure- 2**

2.4 Audit Methodology

Audit examined the relevant records based on which preliminary observations were issued to the Management and the replies of the Management wherever received, were considered while drawing audit conclusions which have been discussed in the subsequent chapters. An exit conference was held in December, 2010 to discuss the audit findings with the Management and the report was finalized and issued to the Ministry of Coal, Government of India in January 2011. The response of the Ministry of Coal was received in May, 2011 and has been appropriately incorporated while finalising this report.

2.5 Acknowledgement

Audit acknowledges the active cooperation and assistance provided by CIL and its subsidiaries at all levels of management which facilitated the completion of this performance audit.

2.6 Audit Findings

Audit findings are discussed in four chapters as detailed below:

- **Chapter 3:** includes issues relating to CSR policy and implementation set up
- **Chapter 4:** highlights environmental concerns regarding backfilling and reclamation of land, afforestation, mine closure plan, dust suppression measures, disposal of slurry and rejects etc.
- **Chapter 5:** flags the issues of employees safety, fatal accidents, stowing in underground mines, shortage of safety equipments etc.
- **Chapter 6:** discusses the issues of social development, rehabilitation and resettlement, absence of need assessment/ survey of society for planning CSR activities and impact assessment of CSR activities.

Chapter 3

Corporate Social Responsibility Policy Framework

3.1 CSR Policy

A defined Corporate Social Responsibility policy addressing the following issues was formulated by CIL only in December 2009:

- environment,
- health care,
- education,
- water supply including drinking water,
- social empowerment, village electricity, solar light,
- sports and culture

However, the Company did not set any measurable targets for the extent of activities proposed to be taken up and schedule of completion under each of these sub-heads.

The Management stated (December 2010) that a separate head of account is being created to book all expenditure related to CSR activities that would help in monitoring the performance under CSR activities.

Each business entity is expected to formulate a CSR Policy to guide its strategic planning and provide a roadmap for its CSR initiatives, which should be an integral part of overall business policy and goals.

The CSR initiatives should include identification of projects/ activities, setting measurable physical targets with timeframes, organisational mechanism and responsibilities to implement CSR initiatives, budget and monitoring setup.

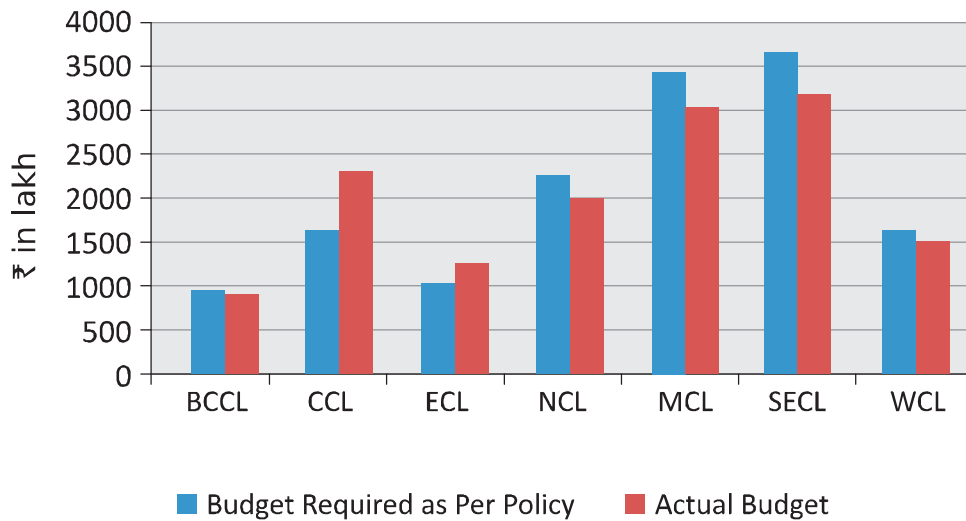
Audit is of the opinion that setting up of measurable targets in addition to accounting under separate heads would serve as an effective tool for monitoring the performance of CSR activities.

3.2 CSR budget and utilization

Before adoption of the CSR policy in December 2009, CIL was having a policy to allocate ₹ one per tonne of the coal produced from the year 2006-07 towards community and peripheral development. This amount is utilized for social development and so far as environment and safety issues are concerned, the resources were provided from the overall budget.

Audit observed that allocation of funds for community and peripheral development was below the norm of ₹ one per tonne of coal produced in five subsidiaries (BCCL, NCL, MCL, WCL and SECL) out of a total of seven subsidiaries for the period 2006-07 to 2009-10 as detailed in the graph below:

Allocation of Budget for CSR



Further, as per CSR policy (December 2009), the fund for the CSR in each subsidiary from the year 2010-11 is to be allocated annually to the tune of five per cent of the retained earnings of the previous year subject to a minimum of ₹ five per tonne of coal production of the previous year. Out of the total fund allocated for CSR activities, 60 per cent would be allocated for CSR activities to be carried out in the vicinity of coalfield and balance 40 per cent would be allocated for carrying out CSR activities by the subsidiary company in the State to which the subsidiary company belongs.

For funding against CSR activities to be executed by CIL (the Holding Company), 2.5 per cent of retained profit of the last year of CIL would be allocated for execution of CSR activities in the State which is not covered by the subsidiary company and in addition would also support the loss making subsidiaries.

Audit while acknowledging the enhancement of CSR allocation is of the opinion that the Company should ensure constructive spending of the allocated funds.

3.3 Separate Fund for CSR activities

A separate head of account for CSR fund has been created from the year 2010-11 and allocation of CSR budget is transferred to this fund.

Audit noticed that the unspent CSR fund available under the head does not lapse and is being accumulated.

3.4 CSR Implementation set up

After adoption of the CSR policy in December 2009, the Company has now a defined system of implementation and monitoring of CSR activities.

For implementation of CSR activities, a CSR committee has been constituted at CIL, subsidiary Headquarters and Area Level to interact with the concerned State Officials, to confirm the areas for undertaking activities under CSR and to ensure avoidance of duplicity of the job.

For monitoring of CSR activities, a CSR cell was framed under Welfare department at CIL corporate level and subsidiary level.

In sum, the CSR policy of CIL is comprehensive in coverage and scope and the funding mechanism and implementation setup is also elaborate. A clear cut CSR policy was adopted in December 2009 and the company now needs to implement it effectively by ensuring adequate allocation of funds and setting up measurable targets.

Recommendation # 1

CIL and its subsidiaries should evolve a mechanism to set up measurable targets with timeline so that performance on CSR activities can be monitored effectively.

The Ministry while accepting the recommendation stated (May 2011) that the CSR Policy of CIL has been introduced from year 2010-11 itself. CSR fund of five per cent of the retained earnings of the last year subject to minimum of ₹ five per tonne of coal production has been allocated for the same. In all the subsidiaries of CIL and its Headquarters, CSR Committees have been constituted which are monitoring the achievements and targets of the CSR activities. Moreover, action is under process for engagement of an independent agency for guiding the company in designing a suitable reporting framework.

Chapter 4

Environmental Issues

4.1 Coal Mining and Environment

Coal can be extracted through open cast or underground mining. In open cast mining, the overburden i.e. the soil layers above the coal layers, are removed to extract coal. In underground mining, the coal is extracted by means of vertical and inclined shafts. Extraction by open cast mining is more productive and less expensive than underground mining. Open cast mining is the

predominant mode of coal mining worldwide as also in CIL, but it is less environmental friendly. It disfigures the countryside and the surface activities tend to pollute the atmosphere within the locality. On the other hand, land subsidence may occur as a result of underground mining, if appropriate precautionary measures are not taken. Consequently, protection of environment in terms of reclamation of land assumes great significance. Besides, there are other significant



environmental issues such as dust suppression, treatment of effluent and sewage, disposal of slurry and rejects and impact on ground water level.

4.2 Environment Management System

Environmental management system (EMS) refers to the management of an organisation's environmental programs in a comprehensive, systematic, planned and documented manner. It includes the organisational structure, planning and resources for developing, implementing and maintaining policy for environmental protection.

Audit observed that CIL and its subsidiaries have about 470 mines and 159 washeries/hospitals/workshops spread over eight States and has initiated action for EMS certification i.e. ISO:14001 in all its mines and washeries and other units. During the year 2009-10, only 15 projects got ISO: 14001 certification which includes opencast projects, workshops, hospitals and washeries. However, only 47 units of the Company got ISO certification as of March 2010.

The Management in its reply stated (May 2011) that till March 2011, 71 units have obtained ISO 14001 certification.

In brief, the Company should take early action to get EMS certification for the remaining units as EMS enables an organisation to evaluate and continually improve its environmental performance and operating efficiency.

4.3 Environment Management Plan: Implementation and Monitoring set up

The mining operations like drilling, blasting, extraction, transportation, crushing and other associated activities are carried out in underground and opencast mines. Mining operations damage the environment and ecology to an unacceptable degree, unless carefully planned and controlled. There is a need for balance between mining and environmental requirements. Therefore, it is necessary to have Environment Management Plan (EMP) in place to address the environmental concern.

Audit noticed that the Company was addressing the environmental issues through the MoUs signed with the Government of India and with its subsidiaries.

The Company has an Environment Management Division functioning at its Headquarters and Subsidiary headquarters. The Company has an 'Environment Policy' approved in 1995 with defined objectives, principles, strategies and thrust areas. However, the policy was under modification due to revision in various statutes and recent environment concerns. The environment monitoring agency of the company i.e. CMPDIL conducts fortnightly examination of samples in respect of air, water and noise pollution in different mines of its subsidiaries through its regional offices. Reports are compiled every quarter and submitted to the respective subsidiaries for submission to the respective State Pollution Control Boards.

Audit, however, observed that no mechanism exists at CIL headquarters to monitor the deviations reported in these quarterly reports from the subsidiaries so that remedial action required to be taken by the latter could be taken timely.

4.4 Environmental clearance

As per MoEF notification of 14 September 2006, prior environmental clearance is required for all projects except those listed in Environment Impact Assessment (EIA) notification 1994 unless their present status of lease area and/or production was changed in comparison to pre-1994 status.

Audit observed that out of 18 sample test checked open cast mines (OCM) and eight underground mines (UGM), six² mines were running without environmental clearance. In all, 239 mines in seven coal producing subsidiaries, which existed prior to 1994, 48³ opencast, 170⁴ underground and 21 combined opencast and underground mines were working without environmental clearance, although their status had changed in comparison to pre-1994 status.

²Ghanoodih OCP, Begunia UGM of BCCL; Urimari OCP and Jarangdih OCP of CCL; Rajpura OCP and Lakhimata UGM of ECL (OCP-open cast pit; UGM-underground mine)

³BCCL (21), CCL (9), ECL (5), SECL (7), MLC (6)

⁴BCCL (65), CCL (13), ECL (82), MCL (4), SECL (6)

Further, MoEF stipulated (February 2002) that prior environmental clearance should be obtained from them for increasing production above the existing approved levels in case of mines existing prior to 1994.

Audit observed that out of 18 sample open cast and eight underground mines, there was increased production to the tune of 45.70 MMT during April 2002 to March 2010 in 10 mines⁵ (38.46 per cent) for periods ranging from one to six years, but no prior environmental clearance was obtained.

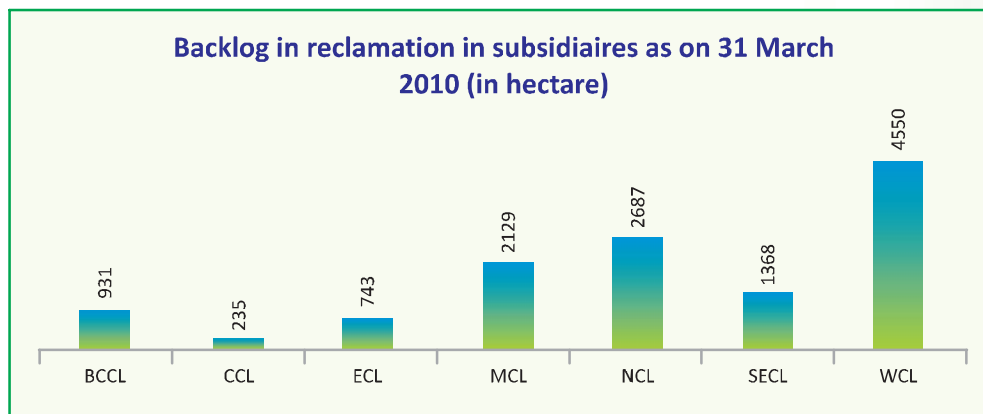
The Management stated (May 2011) that in order to meet the energy needs of the country, including crisis situations in power plants, and to make up the shortfall in production in some collieries, the production in some collieries have to be increased. Further, in respect of 62 mines, environment clearance had been applied for increased production and renewal.

The fact however, remains that mining activities without prior environmental clearance were in total violation of the instructions of the MoEF.

4.5 Backfilling and Technical Reclamation of Land

Mining operations result in voids due to extraction of coal. Land reclamation is necessary to restore the mined area to an acceptable state of physical, chemical and biological quality of land and water regimes which get disturbed by mining. Land reclamation involves backfilling (filling the pit with extracted material), technical reclamation (stabilization of backfilled area against hazards of wind, water and other natural disturbances through bull-dozing, etc.), followed by biological reclamation (restoration of biological productivity of reclaimed land).

The total land to be reclaimed in all the seven subsidiaries as on 31 March 2010 was 12,643 hectare. The status of backlog in land reclamation in different subsidiaries as on 31 March 2010 is given in the graph below:



⁵Jarandih OCP and Urimari OCP of CCL, Nigahi OCP of NCL, Gevra OCP, Rajnagar RO UGM and Bagdewa UGM of SECL, Umrer OCP, Ghorawari OCP, Satpura II UGM and Sasti UGM of WCL

Audit observed that the backlog in backfilling and technical reclamation of land had increased on 31 March 2010 as compared to the previous years in respect of five subsidiaries, viz., BCCL, ECL, MCL, SECL and WCL and the same had decreased in two subsidiaries, namely CCL and NCL. The rate of increase in the backlog was highest in the case of WCL. The subsidiary-wise details are given in **Annexure - 3**.



Backfilling of opencast mines

The Management stated (May 2011) that due to severe constraints in land acquisition, dumping of excavated over burden in the decoaled void is always preferable to CIL and cost effective option for mine operators. But in spite of backfilling being cost effective option, it is not possible to fill the void completely as there is further potential of coal extraction in dip – side and in case of complete filling, it will result in huge cost due to re-handling of filled up material.

The fact remains that backlog in backfilling and technical reclamation of land had increased as compared to previous year. Land reclamation is necessary to restore the mined area to an acceptable state of physical, chemical and biological quality of land and water regimes.

4.6

Biological Reclamation of Land

Biological reclamation of land through conscious plantation is required after physical reclamation of land to restore the natural flora and fauna and the productivity of reclaimed land. Topsoil has to be necessarily preserved for biological reclamation of land.



4.6.1 Preservation of topsoil

Topsoil is the uppermost layer of soil, usually the top 2 to 8 inches. It has the highest concentration of organic matter and micro-organisms and this is where most of the earth's biological activity occurs. It takes approximately 1000 years for one inch of topsoil deposit to be formed. Given the importance of topsoil, MoEF has stipulated that top soil should be stacked at earmarked sites with adequate measures and should be used for reclamation and rehabilitation of mined out areas.



View of an open cast mine showing Top soil, overburden

In a sample of 18 open cast mines, Audit observed that:

- Topsoil was preserved separately in five open cast mines⁶, and in the remaining 13 open cast mines⁷, Management claimed that the topsoil removed was concurrently used for biological reclamation.
- No record was maintained for generation and utilization of topsoil in support of the contention of the Management. Moreover, concurrent use of topsoil violates MoEF guidelines and may defeat the objectives of preservation of topsoil and its use for biological reclamation of land.
- The Management stated (May 2011) that specific instructions have been issued to the respective subsidiaries for maintaining proper records of top soil storage and its re-use which is now being complied with.

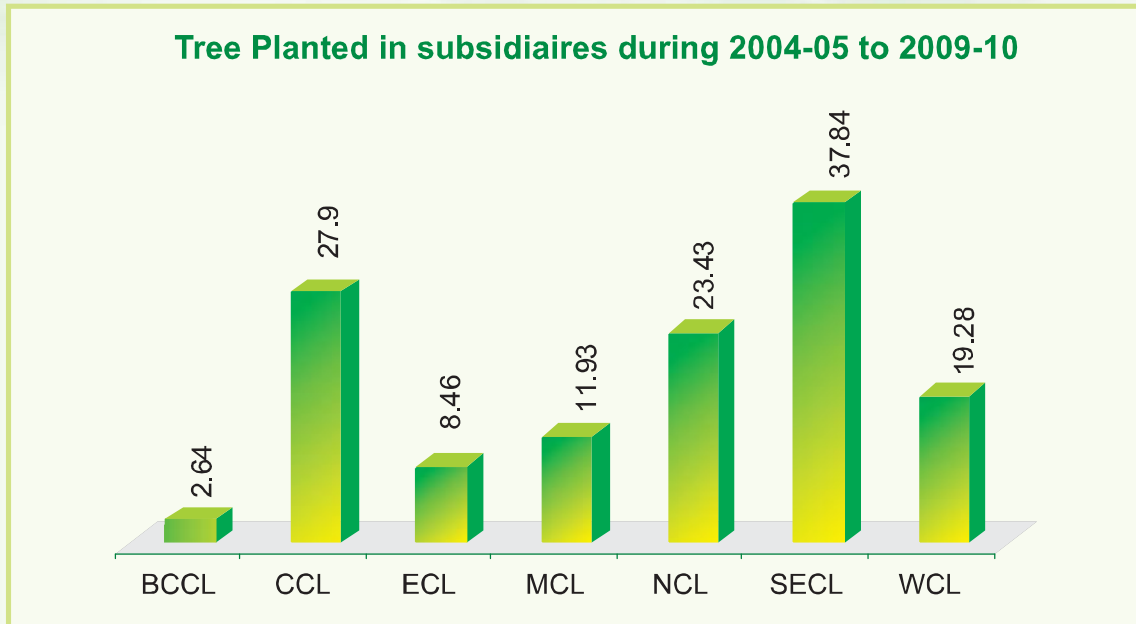
4.6.2 Tree Plantation

Tree plantation mitigates the adverse effects of mining operations and protects the environment. Tree plantation is done by the concerned State forest agencies after receiving payments from the coal subsidiaries. Support and protection to the trees planted are provided by the State forest agencies during the first three years, after which these are handed over to the respective subsidiaries.

⁶ Ghanoodih (BCCL), Rajmahal(ECL), Sonapur Bazari (ECL), Chhal (SECL) and Piperwar (CCL)

⁷ Jagannath, Lajkura and Samaleshwari of MCL, Amlohri and Nigahi of NCL, Jamuna and Gevra of SECL, Ghorawari and Umrer of WCL, Block-II of BCCL, Urimari and Jarangdi of CCL and Rajpura of ECL

The subsidiaries had planted 131.48 lakh trees and incurred expenditure of ₹.72.76 crore during the year 2004-05 to 2009-10. The subsidiary-wise break-up of plantation done is shown in graph below:



Audit observed that

- In a sample of 18 open cast mines, the density of plantation was satisfactory (more than 2500 plants per hectare norms fixed by MoEF) in eight open cast mines, but below the norms in another eight open cast mines. In the remaining two mines (Ghanoodih of BCCL and Umrer of WCL), negligible plantation was done. The details are given in Annexure -4.

The Management stated (May 2011) that the densities of the plantation on these mines are found to be less, since plantation in these mines were done earlier and that time the norms were 1600 plants per hectare.

- No system existed for further monitoring and protection of the trees once the trees were taken over from the State forest agencies. Moreover, the period of three years when support and protection to the saplings was provided by the state forest agencies, was insufficient as the trees were still very young.

The Management agreed with Audit that the contract period of maintenance of saplings by the State forest agencies should be increased to five years.

Mining is only an intermediary use of land and mines have to be closed due to exhaustion of mineable deposit or due to other reasons like policy changes, uneconomic productivity, environment and safety considerations. Closure of mines has to be prompt to ensure speedy reclamation of land for which advance planning action is required. Accordingly, environmental clearance (EC) conditions stipulate that a final mine closure plan along with details of corpus fund shall be submitted to MoEF for approval, five years in advance of final mine closure.

Out of 18 open cast mines and eight underground mines selected in the sample, three mines viz., Rajpura open cast mine of ECL, Jamuna open cast mine of SECL and Satpura-II underground mine of WCL were to be closed within next two to four years as the mineable reserve was due to be exhausted. Audit observed that no mine closure plan had been prepared for any of these three mines.

The Management stated (May 2011) that mine closure plan has been prepared for Rajpur open cast mine and Satpura II. CMPDIL has already taken up the job of preparation of mine closure plans. During 2010-11, mine closure plans for 26 mines have been prepared and sent to the subsidiaries and mine closure plans for 69 mines are under preparation.

(a) Respirable particulate Matter (RPM)

As per the Notification issued by Central Pollution Control Board (CPCB) the, norm for RPM for existing and old coal field/ mines on 24 hourly basis is 300 microgram / cubic meter ($\mu\text{g}/\text{m}^3$) for industrial area and 100 $\mu\text{g}/\text{m}^3$ for residential area.

The air quality data for the year 2008-09 and 2009-10 in respect of three subsidiaries i.e. CCL, BCCL and ECL was examined in selected locations and we observed that:

- In CCL, RPM was above the norm on 34 occasions during 2008-09 and on 15 occasions during 2009-10.
- RPM level in BCCL was within norms during the year 2008-09 and 2009-10.
- In ECL it was within norm during 2008-09 but during 2009-10 it was exceeding the norm on nine occasions only in residential area.

RPM is the dust particulates having diameter less than 10 μm (micron) and they are small enough to be inhaled and may enter deep into respiratory tract and pulmonary system of human beings. RPM because of its small size poses health hazard due to easy inhalation and deep penetration in respiratory system during breathing. Mostly diseases of lungs like asthma, bronchitis, allergic disorders etc. are caused by inhalation of respirable dust.

(b) Suspended Particulate Matter (SPM)

SPM are the particulate having diameter less than 100 µm that tend to remain suspended in the atmosphere for a longer period of time. The atmospheric suspended particulate affect the environment by lowering the visibility, producing hazy condition, participating in secondary reactions in atmosphere and affecting biotic population directly or indirectly.

As per the Notification issued by Central Pollution Control Board (CPCB), norm for industrial SPM on 24 hourly basis is 600 µg/m³ (for existing coal field/ mines) and 700 µg/m³ (for old coal field/ mines). The air quality data for the year 2008-09 and 2009-10 in respect of three subsidiaries i.e. CCL, BCCL and ECL was examined in selected locations and we observed that:

- In CCL, SPM was above the norm on 34 occasions during 2008-09 and on 20 occasions during 2009-10.
- SPM level in BCCL was within norms during the year 2008-09 and 2009-10.
- In ECL, it was within norm during 2008-09 and during 2009-10, it exceeded the norm on eight occasions only in residential area.

In conclusion, the CIL and its subsidiaries should take early action to minimise the RPM and SPM levels as these pose higher risk for respiratory diseases to the employees and the people living in the vicinity of the mines.

(c) Dust Suppression Measures

Mining, handling and transportation of coal generate a substantial amount of dust and gaseous pollutants. Moreover, as Indian coals are believed to be of drift origin, they have very high ash content, necessitating beneficiation of the raw coal. The process involves crushing of raw coal into smaller sizes in coal handling plants (CHPs) and then washing in coal washeries. All these processes generate a large amount of dust and hence, adequate water spraying arrangement is needed to suppress the dust on dust generating points such as receiving hopper of feeder breaker, screening plant, truck loading hopper and ground stocks, haul and transportation, road and railway sidings.

In order to evaluate the adequacy of dust suppression measures in the subsidiaries, Audit selected railway siding in four subsidiaries and observed that:

- (i) Water-spraying arrangements were either non-existent or inadequate in all the railway sidings of BCCL; in Sonpur Bazari and Mugma railway sidings of ECL; and in Talcher, Belpahar, Lakhanpur and Bharatpur railway sidings of MCL. In NCL, however, audit noticed all the railway sidings were equipped with rapid loading system with inbuilt silo, which ensured negligible dust generation during loading of coal.

Spraying of Water through fixed Sprinkler



- (ii) Audit also observed instances of inadequate numbers of sprinklers and water tankers for suppression of dust at haul and transportation roads (Block II of BCCL, Urimari of CCL and Lajkura of MCL), feeder breakers and truck loading points.
- (iii) In order to reduce generation of dust during transportation of coal, the National Dust Prevention Committee had suggested (May 2008) that all trucks should use tarpaulin covers while transporting coal. Audit, however, observed that carrying coal in tarpaulin covered trucks was not stipulated in the transportation contracts.

The Management while agreeing stated (May 2011) that:

- In BCCL, the dust suppression measures are being strengthened in railway sidings. Additional mobile tankers are to be deployed in Block II to mitigate the air pollution in haul roads and coal transportation roads.
- Rapid loading systems with Silos are proposed to be taken up in 3 major mines. In Mahespur, it will be in operation in 2012.
- Adequate dust suppression arrangements have been proposed in the mines in ECL.
- In case of MCL, Talcher railway siding was not in use and action for adequate dust suppression arrangements have been initiated in other three railway siding .

4.9.1 Effluent Discharge

To maintain quality of water for re-use, the prescribed norms by CPCB are given below:

Parameters	Standard--Concentration in milligram/litre (mg/ltr) except pH (not to exceed)
pH⁸	5.5 to 9.0
Total Suspended solids	100
Oil and grease	10
Nitrate Nitrogen	10
COD	250

Discharge water quality data for the year 2008-09 and 2009-10 in respect of three subsidiaries i.e. CCL, BCCL and ECL was examined in selected locations and we observed that:

- In CCL, during the years 2008-09 and 2009-10, elements like Total Suspended solids and COD were much above the prescribed norms.
- In BCCL and ECL, effluent discharge level were within norms.

4.9.2 Effluent and Sewage Treatment Plant

As per the standard industry practice, effluent treatment plants (ETPs) and sewage treatment plants (STPs) should invariably be installed to treat the discharged water to prevent further degradation of water quality. Further, there should be oil and grease traps (OGTs) to trap used oil and grease from the workshop effluent.

Audit observed that out of 18 sample open cast mines, there was no effluent treatment plant in two open cast mines⁹. Four open cast mines¹⁰ did not have STPs. Two mines (Jarangdih of CCL and Jamuna of SECL) did not have OGTs and two mines (Lajkura and Samaleshwari of MCL) had inadequate capacity to trap used oil and grease produced in the workshop. Audit, however, observed that in NCL, all the 10 open cast mines were equipped with ETPs and STPs.

The Management stated (May 2011) that in all major open cast projects, work shops effluent plants/ oil and grease trap have been constructed and action has been initiated to construct the same where it is non-existent. Jarangdih is on the verge of closure. The effluent was with in the stipulated limits. Two settling tanks are proposed to be constructed in Jamuna open cast project.

⁸measure of the acidity or basicity of a solution

⁹Ghanoodih of BCCL; and Jarangdih of CCL

¹⁰Block II of BCCL; Urimari and Jarangdih of CCL; and Lajkura of MCL

4.9.3 Acid Mine Drainage

Acid Mine Drainage (AMD) refers to distinctive types of waste bodies that originate from the weathering and leaching of sulphide minerals present in coal and associated strata. Environmental effects of AMD include contamination of drinking water and disrupted growth and reproduction of aquatic plants and animals. It also results in corrosion of mining equipments and structures such as barges, bridges and concrete materials.

Audit observed that such instances were noticed by CIL management in few mines. The issue was referred to CMPDIL, its subsidiary which looks after exploration and drilling work to establish coal reserves, which has taken up a R&D study by bio-treatment in one of the selected area in WCL.

In essence, the Company and its subsidiaries should take early action to construct the effluent treatment plant and make continuous efforts to keep the level of the quality of effluent in the water discharged from the mines within the norm to avoid adverse effect of these chemicals. The Company should also make constructive efforts to arrest the Acid Mine Drainage as it impacts the ground water and aquatic life as well as mining infrastructure.

4.10 Disposal of slurry and rejects

Slurry is a by-product generated during the washing of coal. Slurry is stocked in the slurry ponds created near the washeries. Stockpiling of slurry beyond the capacity can create environment hazards by way of water and land pollution in nearby areas, particularly in the rainy season. Besides, spontaneous fire in summer can also cause air pollution as well as spread of fire to the adjoining areas.

In a test check of washeries in BCCL and CCL, Audit observed that stock of slurry and rejects as on 31 March 2010 was equivalent to 95.04 months' and 85.07 months' of production respectively against the norms of one to three months' suggested by the Central Pollution Control Board. Out of four washeries selected in sample, in Kathara washery of CCL, the stock of slurry as on 31 March 2010 was more than 122.19 months' production and in Nandan washery of WCL, there was no identified location for disposal of rejects and the same were being used to fill low lying areas.

The Management stated (May 2011) that action has been taken for disposal of existing stock of slurry and rejects.

4.11 Impact on ground water level

Ground water is a potential hazard to mining operations. Large scale dewatering is done to reduce ground water pressure, but this may bring about a decline in regional water table. The Central Ground Water Authority conducted (July 2009) studies in 18 mining areas of two of its subsidiaries SECL and WCL in Madhya Pradesh and found that the ground water level had depleted in seven areas during the pre-monsoon period and in 11 areas during the post-monsoon period. As per the standard practices, the depletion of ground water table may be compensated through adequate rain water harvesting arrangement.

Audit observed that out of 10 areas in NCL, rainwater harvesting had started in four areas. Similarly, MCL had started roof top rain water harvesting in residential and non-residential buildings in four open cast projects. Further, BCCL converted an abandoned mine into rain water harvesting pond. Thus, only a handful of projects had the rain water harvesting arrangement.

The Management stated (May 2011) that subsidiaries have been advised to take up rainwater harvesting schemes.

4.12 Using Methane From Coal Mines

Methane gas is formed as part of coal formation process and is released from the coal seam and surrounding disturbed strata during mining operations. Methane is a potent greenhouse gas with a global warming potential 23 times that of carbon dioxide. As per World Coal Association, coal mining accounted for 7.4 per cent of the total human induced methane emissions in 2005.

Audit observed that the Company has made a modest beginning in this area and only one project at Moonidih coal mine of BCCL in Jharia coalfield in Jharkhand has actually been implemented for coalbed methane (CBM) recovery and commercial utilisation while two other projects in Jharia and Raniganj coalfields, were still under development with ONGC since August 2003 and June 2004 respectively. Thus, there is a need for expeditious identification and implementation of CBM recovery projects.

The Management stated (May 2011) that identification and implementation of CBM recovery projects would be expedited.

In conclusion, CIL and its subsidiaries have taken initiatives in areas impacting environment. However, activities like backfilling, land reclamation, preservation of topsoil and plantation of trees and other environmental issues need to be identified so that CIL's vision of increasing coal production from 324 million tonnes in 2004-05 to 782 million tonnes in 2024-25 is achieved. The Company was also lagging behind in taking prior environment clearance for mines.

Recommendation # 2

Topsoil should be preserved at earmarked sites without violating MoEF guidelines and proper record of its storage and use should be maintained.

Recommendation # 3

Contract period of maintenance of saplings by the State forest agencies may be increased from the present three years to five years so that the plants become self sustaining.

Recommendation # 4

In order to arrest depletion of ground water level as a result of coal mining, subsidiaries may take up rainwater harvesting.

The Ministry while accepting the recommendations stated (May 2011) that the instructions have been issued to CIL's subsidiaries.

Chapter 5

Safety in Mining

Safety in coal mines is governed by the Mines Act, 1952 and the rules and regulations framed under this act. The Mines Rules, 1955, the Coal Mines Regulations, 1957, the Mines Rescue Rules, 1985 are some of the major statutes framed under the Mines Act. The Directorate General of Mines Safety (DGMS), under the Ministry of Labour & Employment has been empowered to enforce the statutes relating to mine safety. The Mines Act or any rule or regulation framed thereunder is amended from time to time as per necessity as deemed fit by the DGMS, in view of any recommendation of any Court of Inquiry into any major accident or otherwise. However, from time to time circulars are issued by DGMS on safety issues for adoption in mine operation. There is a Standing Committee on Safety in Coal Mines which is chaired by Minister in Charge of Coal. This meeting is attended by officers from Ministry of Coal, Ministry of Labour & Employment, DGMS, representatives of Trade Unions, Coal companies (All PSUs & Private companies), State Mines & Mineral Development Corporations. The Committee meets biannually to take stock of the safety situation in coal and lignite mines and suggests measures for bringing further improvement in the field of safety.

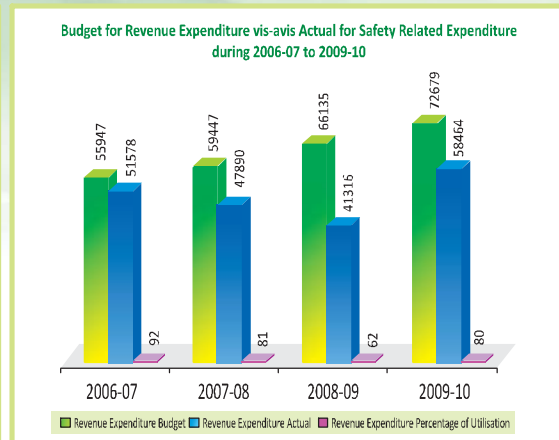
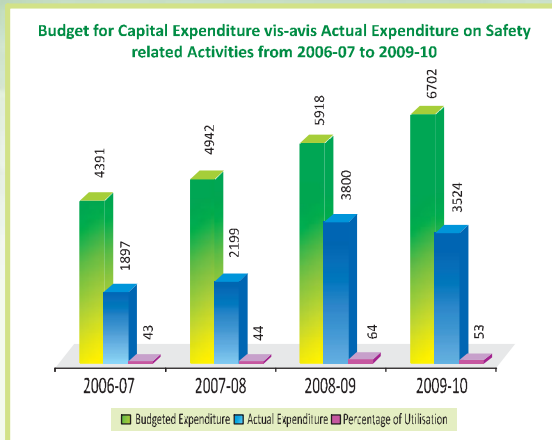
Safety is an important aspect in functioning of an industry. It is important not only for its employees and workers but also for the environment and the nations. Coal industry poses one of the most difficult challenges in the area of safety, health and environment when compared to many other industries due to complex nature of its operations and maintenance activities and wide range of hazards associated with them. Despite tremendous technological progress, the safety culture and safety at work still are serious issues. Therefore, maintaining of high standards of health, safety and environment in coal industry is of paramount importance.

5.1 Safety Policy

The safety policy of CIL aims at 'zero harm potential' in all mines and covers security issues like designing and implementing of safety plans, deployment of dedicated safety personnel, establishment of internal safety organization and multi level monitoring.

5.2 Safety budget

Each subsidiary company prepares capital and revenue budget for safety related activities. Examination of records for CIL as a whole, for the year 2006-07 to 2009-10, revealed that actual expenditure, on capital head and revenue head ranged from 41 per cent to 64 per cent and 62 per cent to 92 per cent respectively to the budgeted expenditure, as shown in the graph below.



Audit observed that individually in all the subsidiaries, the actual expenditure on capital account was less than the budgeted expenditure except SECL (2006-07, 2007-08 and 2009-10) and ECL (2008-09). On the revenue head, actual expenditure was less than the budgeted expenditure except CCL (2006-07) and NCL (2006-07 to 2008-09).

Audit is of the opinion that budget management was not adequate as despite the allocation of funds available under 'Safety' head ; expenditure on safety related issues was not spent .

5.3 Safety Audit

As per the safety committee of CIL, every mine should be covered by an independent safety audit at a frequency of two years to ensure adherence to the safety standards.

Audit, however, observed that safety audits were not carried out regularly in the subsidiaries. In BCCL, no safety audit of opencast mines was carried out during the period 2003-07. However, safety audit in 60 mines of BCCL was conducted during the period from September 2007 to January 2008.

The Management stated (December 2010) that safety audit would be conducted regularly in respect of all the projects.

5.4 Safety in respect of Overburden Dumps in Open Cast Mines

One of the major safety issues with regard to open cast mines is the maintenance of overburden dumps. These dumps have to be maintained strictly in accordance with the safety parameters imposed in terms of height, steepness of slope, etc, otherwise they may collapse, endangering human life, fauna and property, as it happened in Birsampur Area of SECL (May 2009) and Jayant Area of NCL (December 2008). These safety parameters are stipulated in the project reports and environmental clearance given by MoEF, based on local site conditions.



Out of 18 open cast mines selected in sample, Audit observed that in 10 mines¹¹, there were cases of excess height and higher gradient and accommodation of excess overburden than prescribed in the environment clearance/ project reports. The details regarding excess height and higher gradation are given in **Annexure - 5**.

The Management stated that:

- excess height was due to non clearance of land (CCL);
- there has been no case of mudslide due to the properties of the overburden material and resultant angle of repose (ECL);
- the prescribed height was for external dumps and not for internal dumps (WCL);
- Precautionary steps were being taken in case of fresh dumping of overburden.

The fact remains that the Company compromised with the safety requirements while dumping overburden.

5.5 Stowing in underground mines

Stowing, the process of filling spaces left in underground mines after extraction of coal with sand and or any other material, is required for the safety of the mines as well as for the conservation of coal by combating mine fire. Improper stowing also encourages illegal mining as well as collapse of mine roof, leading to subsidence of road, rail track and other physical structure erected over it. One of the important reasons of historic mine fire in Jharia region of BCCL was the improper stowing of underground mine in pre-nationalized period.

Audit observed shortfalls in stowing in all the three subsidiaries, which have underground mines. The reported shortfall in stowing as on 31 March 2010 was 4,41,912 cum in ECL; 3774 cum in BCCL and 11330 cum in Sikra, Swang and Jarangdih underground mines of CCL

The Management stated that action would be taken to keep the backlog in stowing within permissible limits.

The fact however, remains that shortfall in stowing is fraught with the risk of hazards of accidents.

5.6 Accidents Reporting

The different types of accidental hazards are Roof/side Falls, Haulage, Conveyor and Winding, Trucks, Dumpers and wagons, Explosive and Electricity etc.

The details of the fatal accidents during 2005 to 2009 are shown in the chart below:

¹¹ Block II of BCCL, Urimari and Jarangdih of CCL, Rajpura and Sonepur Bazari of ECL, Lajkura of MCL, Gevra and Jamuna of SECL, Ghorawari and Umrer of WCL.

Fatalities



- There were 285 fatal accidents involving 382 fatalities during the year 2005 to 2009 in CIL.
- Audit observed that though the number of fatal accidents, number of fatalities, number of serious accidents and serious injuries showed decreasing trend in CIL and its subsidiaries during the period from 2005 to 2009 but it was not able to achieve the zero harm target.
- The rate of accidents and injuries per million tonne of coal production in underground mines decreased from 4.15 in 2005 to 2.39 in 2009 in CIL as a whole.
- Analysis of reasons for fatal accidents done by safety committee revealed that majority of the fatal accidents were due to ground movement, wagons & dumpers, non-transport machines, explosives and electrocution etc. This indicates that the fatal accidents could have been avoided to a great extent, had proper and adequate steps been taken by the management.



The Management replied (December 2010) that rate of accident declined in 2009.

5.7 Shortage of Manpower and Safety Equipment

According to Mines Rules, 1955, for every mine wherein 500 or more persons are employed, there shall be designated overman, mine foreman or electrical supervisor to keep the electrical and other mechanical installations running and in safe working condition.

Audit noticed that:

- In CIL and its subsidiaries, there was an overall shortage of 3213 employees against the requirement as on 31 March 2010.
- The shortage over requirement was in the range of 0.63 per cent to 29.35 per cent in all the categories. This shortage in the non-executive cadre was observed in all the subsidiaries. (Annexure -6)
- In four¹² out of eight underground mines selected in sample, there were shortages of safety equipment like flame safety lamps, cap lamps, exploders, fire extinguisher, anchorage testing machine, self rescuer, carbon dioxide in absorbents, shoes, helmet, methanometer, telecommunication equipment, personal dust sampler etc.

The Management stated that action has been initiated to fill up the vacancies and shortage of safety equipments was being monitored regularly and action has been initiated for removing the shortages.

5.8 Subsidence and Fire in Jharia and Raniganj coal field

The problems of subsidence and fire are the result of unscientific mining carried out by the erstwhile mine owners over more than 200 years of operations in the coalfields of Jharia and Raniganj prior to nationalisation. In spite of the declaration of these areas unsafe by the local administration, the habitation increased unabated. The problem of subsidence and fire were being addressed by the Government from time to time and a high level committee was also set up in December 1996 under the chairmanship of the then Secretary, Ministry of Coal. Based on the recommendations of the committee a Master Plan was prepared to deal with the problems of fire and subsidence and related rehabilitation covering the areas under BCCL and ECL in 1999 for implementation in a phased manner.

Further, based on the recommendations of Directorate General of Mines Safety and Planning Commission to reduce the time frame from 20 years to 10 years, the Master Plan of Jharia and Raniganj coalfields dealing with fire, subsidence, rehabilitation and diversion of surface infrastructure was updated in March/ April 2008 which was approved by the Government of India in August 2009 at an estimated investment of ₹ 9773.84 crores (₹ 7112.11 crore for Jharia and ₹ 2661.73 crore for Raniganj) as detailed in **Annexure - 7**.

To meet this expenditure, CIL would contribute ₹ 350 crore per annum from their own resources and balance is to be provided from collection of Stowing Excise Duty under Coal Mines (Conservation & Development) Act, (CCDA), 1974. CIL has released ₹ 159.72 crore to ECL and ₹ 14.34 crore to BCCL during the year 2010-11.

¹² Begunia and Jhanjara (ECL), Bagdewa (SECL) and Satpura of WCL

Audit observed that the main constraint for implementation of Rehabilitation scheme by BCCL and ECL is the problem of acquisition of land in the sites located on non coal bearing areas along the periphery of Jharia / Raniganj coalfields. Therefore, Management needs to expedite acquisition of land and ensure implementation of the scheme as the funds were available.

5.9 Occupational Health Care

Occupational health care is of immense significance in coal mining, given the hazardous working conditions. Occupational health issues in coal mining are mainly governed by the Mines Act, 1952 and other rules and regulations framed under this Act.

5.9.1 Medical Examination of Workers

- According to Section 29B of the Mines Rules 1955, the pre-employment health examination is mandatory for all employees, including contractors' employees. Audit observed that although initial medical examination was done mandatorily in all the subsidiaries for the company employees, very few contractors' employees underwent initial medical examination. The percentage of contractors' employees undergoing initial medical examination in CIL and its subsidiaries was approximately 1.58 to 7 during 2005-06 to 2007-08.

The Managements replied that efforts are on to cover the initial medical examination of contractors' employees. CCL attributed the backlog to delay in finalization of charges to be recovered from the contractors.

- Further, as per the provisions of the Mines Rule 1955, one-fifth of the workers are supposed to undergo periodical medical examination every year so that each worker is covered every five years. Audit observed that there was hardly any backlog in periodical medical examination of the workers in any of the subsidiaries during the calendar years 2004 to 2009.
- Medical examination would be more effective if the medical history/findings of periodical medical examination is properly maintained. Mine Rules 1955 also provide for it through 'Form O'. The effectiveness would improve if the medical history is maintained in a computerized database. Audit observed that such a computerized database was being maintained in only one subsidiary, viz., NCL.

The Management agreed (December 2010) to look into the issue so that such data can be captured in computerized environment.

5.9.2 Mortality among employees

Audit analyzed the data relating to causes of death among employees in two subsidiaries, viz., BCCL and CCL for one year (2007) and observed the following:

- High percentage (BCCL-11.25 per cent and CCL-16.08 per cent) of deaths due to conditions like liver cirrhosis and alcohol abuse;
- High percentage (BCCL-6.43 per cent and CCL- 14.57 per cent) of deaths due to acute and chronic renal failure; and
- Incidence of death due to respiratory and cardio vascular diseases, malignancy and TB below the national average¹³.

Conclusion : There was a decreasing trend in all categories of accidents in CIL and its subsidiaries during the period under audit review. However, in order to achieve the objective of 'zero harm potential' in all the mines as envisaged in the safety policy, safety parameters in different mines need to be regularly monitored and upgraded.

Occupational health care of the workforce is of immense significance for CIL and its subsidiaries, given the hard working conditions in the mines and the adjoining areas. CIL and its subsidiaries need to pay greater attention to regular medical examinations and follow up to prevent health hazards. All efforts need to be directed towards reducing continuous exposure of the employees to hazardous environment.

In sum, the trends of mortality among employees and the analysis of the causes of mortalities point towards the need for more effective medical examination and increasing medical awareness among employees.

Recommendation # 5

Independent safety audit of every mine should invariably be conducted at a frequency of two years as suggested by the safety committee of CIL.

Recommendation # 6

All subsidiaries may maintain computerized database of medical history of employees as is being done in NCL for effective medical care.

The Ministry stated (May 2011) that:

- In MCL and NCL Safety Audit has already started and is under progress. In other subsidiaries conducting of Safety Audit is also under process of starting.
- Computerized Data base of Medical History of employees for effective medical care is being done and is under active consideration of implementation in totality in subsidiaries of CIL as being done in NCL.

¹³ In the age group of 25 -69 years

Chapter 6

Community and Peripheral Development

6.1 Community and Peripheral Development

CIL has a 'Community and Peripheral Development' policy that lays down guidelines for taking up development and welfare activities in the adjoining areas of mining operations.

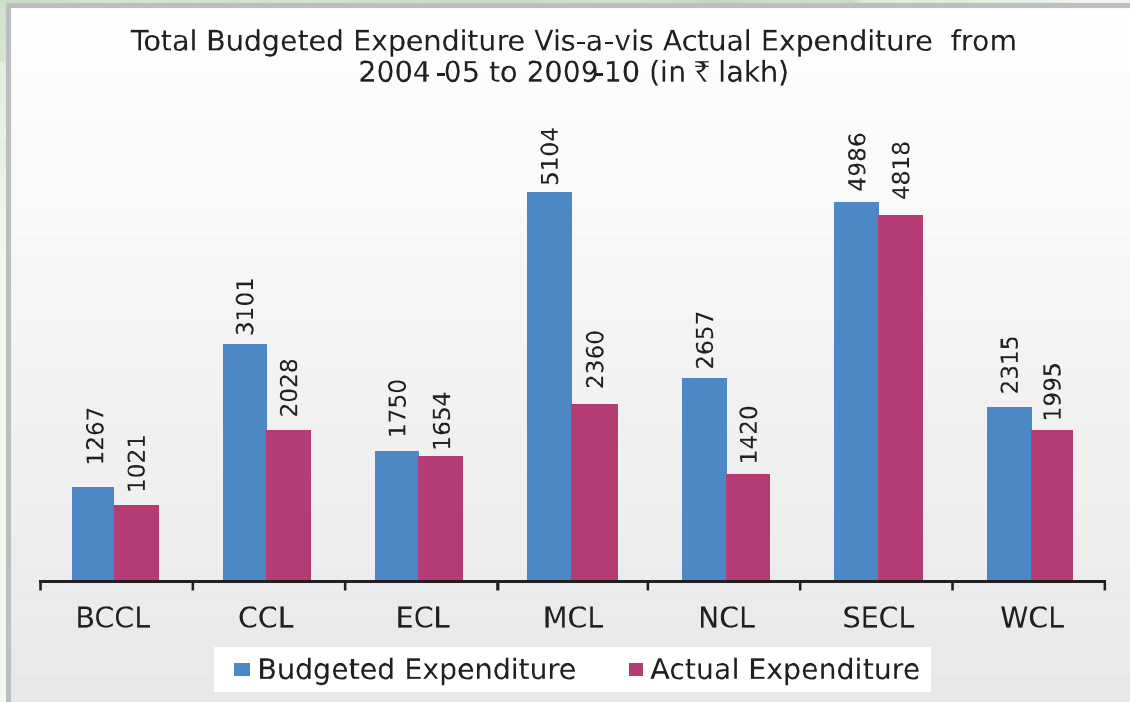
6.2 Expenditure on Community and Peripheral Development

CIL and its subsidiaries have been carrying out community and peripheral development programmes such as creation of infrastructure in adopted villages; health care to local community by means of mobile medical van, health camps and free outpatient checkups; and relief camps at the time of natural calamities like flood, drought, cyclone etc. In addition, special programs like 'Operation Jyoti' (to restore eyesight) were being run.



Audit, however, observed that allocation of funds for community and peripheral development was below the norms of ₹ one per tonne of coal produced in four years from 2006-07 to 2009-10 in BCCL, NCL, MCL and SECL and in few years, in the case of CCL, ECL and WCL.

In fact, the budget allocation of ₹ 211.80 crore for community and peripheral development during the period 2004-10 was only 0.7 per cent of the aggregate net profit of ₹ 31062.36 crore over the same period. The subsidiary-wise details of budgeted and actual expenditure on community and peripheral development are shown in the graph below.



(₹ in crore)

Company	Budget allocation (2004-10)	Actual expenditure (2004 -10)	Percentage of actual expenditure to Budgeted allocation
BCCL	12.67	10.21	80.58
CCL	31.01	20.28	65.40
ECL	17.50	16.54	94.51
MCL	51.04	23.60	46.24
NCL	26.57	14.20	53.44
SECL	49.86	48.18	96.63
WCL	23.15	19.95	86.18
Total	211.80	152.96	72.22

The utilisation of funds during the period 2004-10 fell short of budgeted allocation in all the subsidiaries and was least in MCL followed by NCL and CCL thus, allowing their CSR activities to remain unfulfilled. In fact, while the budget allocation itself was less than one per cent of the profits, even then, the Company failed to utilize this meager allocation fully.

The Managements replied (June-July 2010) that the shortfall in expenditure was due to non-availability of approved list of activities from district administration, delay in tendering and other procedural delays.

Audit is of the opinion that these are procedural lapses which could be taken care of through suitable planning and effective monitoring.

6.3 Rehabilitation and Resettlement of People Affected by Projects

CIL has a well defined Rehabilitation and Resettlement Policy on the lines of the National Rehabilitation and Resettlement Policy, 2008.

Audit observed that money for land acquisition was promptly deposited to the concerned State government authorities and any delays in land acquisition were not attributable to the subsidiaries. By and large, the subsidiaries were prompt in releasing the compensation and other benefits to the People Affected by Projects.

6.4 Planning for CSR activities

A long-term Corporate Social Responsibility Plan needs to be prepared matching with the long term business plan. This may be broken down into short term and medium term plans, specifying activities to be undertaken, budgets allocated, responsibilities and authorities defined, and measurable results expected. The plans should be prepared after conducting need assessment of the targeted community/area.

The CSR Committee of CIL examines the proposals received and accordingly proposals are finalised based on the needs of the society.

Audit observed that the CIL was not carrying out any need assessment / survey of the society for preparing the CSR plan.

The companies should map their CSR plan after assessing the needs of the society in order to fulfill the essential requirements of the society.

6.5 CSR Monitoring and Impact Assessment

Audit observed that CIL and its subsidiaries were not evaluating CSR projects undertaken by it and was also not doing any overall impact assessment of the CSR activities undertaken by it.

The Management stated (May 2011) that CSR policy has come into operation from the year 2010-11, hence the overall impact assessment and evaluation of CSR projects/activities would be taken up through an outside agency.

The companies should evaluate impact on the society of these CSR activities which would also help the Companies in future planning of CSR initiatives.

Conclusion: CIL and its subsidiaries have been taking up development and welfare activities in the adjoining areas of mining operations as per their 'community and peripheral development' policy. However, allocation of funds and expenditure on community and peripheral development was below the norms. CIL and its subsidiaries need to spend constructively on community and peripheral development as per their norms. The company was not carrying out any need assessment survey in its periphery to assess the requirements of the society. The company was also not evaluating the impact on the society of their CSR activities.

Recommendation # 7

CIL and its subsidiaries should plan and spend constructively on community and peripheral development after assessing the needs of the society.

The Ministry stated (May 2011) that CIL has formulated a CSR Policy in which fund has been allocated at the rate of 5 per cent of the retained earnings of the last year subject to a minimum of ₹ five per tonne of coal production. This fund shall not lapse but shall be transferred to CSR fund for the next year. This has ensured that the fund allocated for CSR activity shall be spent on the activities earmarked only.

Chapter 7

Conclusion and Recommendations

7.1 Conclusion

The Company has a well defined CSR policy comprehensive in coverage and scope. However, to reap the benefits of the policy, the company needs to implement it effectively by ensuring adequate allocation of funds and setting up measurable targets. Allocation of funds and expenditure on community and peripheral development was below the norms in case of five out of seven subsidiaries. To discharge its CSR activities effectively, CIL and its subsidiaries need to constructively spend on community and peripheral development as per their norms and policy. The companies were not carrying out any need assessment survey in the periphery to assess the requirements of the society and were also not assessing the impact of their CSR activities on the society.

Mining operations damage the environment and ecology to an unacceptable degree, unless carefully planned and controlled. While the Company has taken initiatives in areas impacting environment, there is a scope for further improvement in the areas of backfilling, land reclamation, preservation of topsoil and plantation of trees, recovery of Coal Bed Methane so that Company's vision of increasing coal production from 324 million tonnes in 2004-05 to 782 million tonnes in 2024-25 is achieved.



Given the hard working conditions in the mines of CIL and its subsidiaries, occupational health care of its human assets assume a greater significance. CIL and its subsidiaries, therefore, need to pay greater attention to regular medical examinations and follow up to prevent health hazards. Though the number of fatal accidents, number of fatalities and number of serious accidents showed declining trend but it was not able to achieve the zero harm target.

Based on the audit findings discussed in the foregoing chapters, significant recommendations are summarized below:

- i CIL and its subsidiaries should evolve a mechanism to set up measurable targets with timeline so that performance on CSR activities can be monitored effectively.
- ii Topsoil should be preserved at earmarked sites without violating MoEF guidelines and proper record of its storage and use should be maintained.
- iii Contract period of maintenance of saplings by the State forest agencies may be increased from the present three years to five years so that the plants become self sustaining.
- iv In order to arrest depletion of ground water level as a result of coal mining, subsidiaries may take up rainwater harvesting.
- v Independent safety audit of every mine should invariably be conducted at a frequency of two years as suggested by the safety committee of CIL.
- vi All subsidiaries may maintain computerized database of medical history of employees as is being done in NCL for effective medical care.
- vii The Company should plan and spend constructively on community and peripheral development after assessing the needs of the society.

New Delhi

Dated : 28 July, 2011



(ARVIND K. AWASTHI)

Deputy Comptroller and Auditor General
and Chairman, Audit Board

Countersigned

New Delhi

Dated : 1 August, 2011



(VINOD RAI)

Comptroller and Auditor General of India

Annexure -1

Statement showing details of sampled projects (As referred to in Para 2.1)

Name of the subsidiary Company	Opencast Projects		Underground Mines		Washeries	
	Total number	Number & name of sample	Total number	Number & name of sample	Total number	Number & name of sample
Bharat Coking Coal Limited (BCCL),	52	2 (Block II, and Ghanoodih)	81	2 (Begunia and Moonidih)	13	1 (Bhojudih)
Central Coalfields limited (CCL),	40	3 (Piperwar,, Urimari and Jarandih)	27	0	7	2 (Piparwar and Kathara)
Eastern Coalfields Limited (ECL),	26	3 (Rajmahal, Sonpur bazari, and Rajpura)	100	2 (Lakhimata and Jhanjra)	0	0
Mahanadi coalfields Limited (MCL),	25	3 (Jaganath, Samalewari and Lajkura)	9	0	0	0
Northern Coalfields Limited (NCL),	11	2 (Nigahi and Amlohri)	0	0	1	0
South Eastern Coalfields Limited (SECL)	25	3 (Gevra, Jamuna and Chhaal)	73	2 (Rajnagar and Bagdewa)	0	0
Western Coalfields Limited (WCL).	52	2 (Umrer and Ghorawari)	44	2 (Satpura-II and Sasti)	1	1 (Nandan)
Total	231	18	334	8	22	4

NB : Total number of open cast project, underground mine and washeries includes operational as well as non operational mines.

Sampling Criteria:

- Open cast mines for each subsidiary were stratified production wise in three categories i.e. less than one MMT, between one MMT to five MMT and above five MMT. Three Open cast mines were selected from each subsidiary from each of these strata wherever applicable. The largest producing Open cast mine of each subsidiary was out rightly selected. Total 18 Open cast mines (one being highest coal producing and others from remaining strata randomly) were selected.
- Two underground mines each in BCCL, ECL, WCL and SECL were selected one being the highest producing and the other randomly.
- The largest producing washery from BCCL, CCL and WCL was selected. Other was selected randomly.

Annexure -2

Audit Criteria

(As referred to in Para 2.3)

- The Mines Act, 1952
- The Mines Rules, 1955
- The Coal Mines Regulation, 1957
- The Coal Mines Pit Head Bath Rules, 1959
- Mines Crèche Rules, 1966-(relates to workers' welfare)
- The Mines Rescue Rules, 1985
- The water (Prevention and Control of Pollution) Act, 1974
- Water (Prevention and Control of Pollution) Cess Act, 1977
- The Forest Conservation Act 1980
- The Air (Prevention and Control of Pollution) Act, 1981
- The Environment (Protection) Act, 1986
- The Hazardous Waste (Management and Handling) Rules 1989
- The EMP Notification 1994.
- Revised EMP notification, 2006.
- Project report of individual mines
- EMP report of individual mines.
- Circulars issued by DGMS, State pollution board etc. in respect of project and companies
- Conditions imposed by MoEF/DGMS in respect of individual projects
- Policy of CIL on Community & Peripheral Development in CIL and its Subsidiaries
- Policy of CIL on Rehabilitation and Resettlement
- National R&R policy 2008
- Mine safety policy of CIL
- Pit safety committee report
- Safety audit report
- Guidelines of CIL on Environment management
- National Dust prevention committee report
- Guidelines for preparation of mine closure plan issued by ministry of coal.
- CSR policy of CIL,
- Corporate Social responsibility voluntary guidelines 2009 issued by ministry of corporate affairs

Annexure -3

Status of land reclamation (As referred to in Para 4.5)

Name of the company	Progressive land to be reclaimed as on 31.03.10 (Ha)	Progressive land to be reclaimed as on 31.03.09 (Ha)	Increase/ Decrease (-) in backlog in reclamation (Ha)
MCL	2129.36	2019.08	110.28
CCL	235.00	2442.38	(-) 2207.38
BCCL	930.76	812.39	118.37
SECL	1367.72	1357.81	9.91
NCL	2687.00	2910.88	(-)223.88
ECL	743.19	738.22	4.97
WCL	4549.97	3507.97	1042
Total	12643.00	13788.73	(-)1145.73

Annexure -4

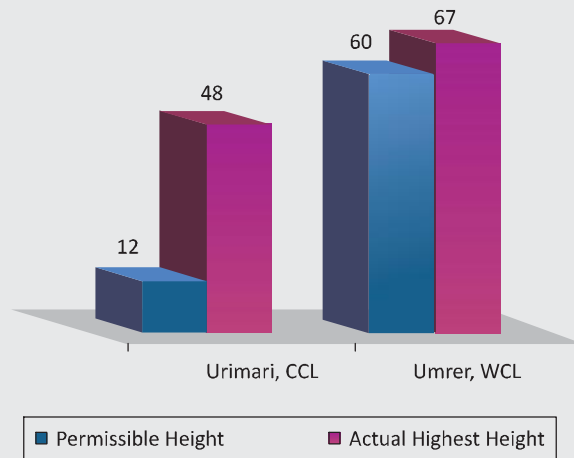
Density of Plantation of sampled open cast mines (As referred to in Para 4.6.2)



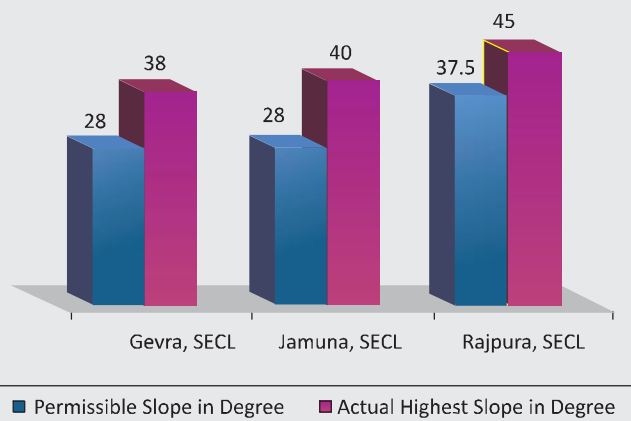
Annexure -5

Safety parameters in respect of overburden dumps - actual vis-à-vis permissible (As referred to in Para 5.4)

Comparison of Permissible Height and Actual Height of Two Sampled OC (in metre)



Comparison Between Permissible Slope and Actual Slope of Three Sampled OC (in degree)



Annexure -6

Table showing actual deployment and shortage of statutory manpower in CIL and its subsidiaries
(As referred to in Para 5.7)

Category	Appointment made during 2009-10	Existing as on 31/03/10	Requirement as On 31/03/10	Excess (+)/Shortage (-)
1 st class manager (Executive)	Nil	1724	1735	(-) 11
2 nd class manager (Executive)	Nil	1834	2596	(-)7 62
Overman (Non-Executive)	189	5249	6124	(-) 875
Mining sardar (Non-Executive)	125	6957	8408	(-) 1451
Surveyor (Non-Executive)	10	928	1042	(-) 114

Annexure -7

Summarised details of master plan (As referred to in Para 5.8)

Sl. NO	Particulars of the different components of Master Plan	Raniganj (ECL)	Jharia (BCCL)
A	Dealing with fire		
1	Total no. of existing fires	7	67 [under 45 fire projects]
2	Estimated Cost [₹ crores]	40.28	2311.50
B	Rehabilitation		
1	No. of sites to be Rehabilitated	139	595
2	Area affected in sq.km	8.62	25.69
3	No. of houses to be vacated/ Rehabilitated		
i]	BCCL [Taking into account superannuation]		44155/25000
ii]	Private [Authorised]		29444
iii]	Encroachers [Un-authorized]		23847
iv]	Others		868
	Total No. of houses	33196	98314/79159
	Population covered	180263	395795
4	Land required for rehabilitation [Hal]	896.29	1504.99
5	Estimated cost [₹ crores]	26.10.10	4780.60
c	Diversion of Railway line/ Road/ OC pipeline	7 sites	Planning and survey with an outlay of Rs.20 crores
	Estimated Cost [₹ Crores]	11.35	20.00
D	Implementing Agency for fire projects & rehabilitation of BCCL/ECL houses	ECL	BCCL
E	Implementing Agency for rehabilitation of Non-BCCL/ECL houses –Private & Encroachers	Asansol Durgapur Development Authority [ADDA] Govt. of WB	Jharia Rehabilitation & Development authority of [JRDA] of Govt. of Jharkhand
F	Implementation Schedule, years	10 [in two phases each of 5 years]	10 [in two Phases each of 5 years +2 years for pre implementation
G	Estimated Capital Requirement for fire projects, rehabilitation & diversion of rail/road/ pipeline etc. [₹ crore]	2661.73	7112.11