Analysis of the Draft EIA/EMP Report for Durgapur II – Taraimar Coal Block

For

M/S Bharat Aluminium Company Limited

Background of the technical report

Bharat Aluminium Company (BALCO) is planning to set up a 4 Million Tonnes per Annum (MTPA) coal mining project and a 650 Tonnes per Hour (TPH) coal washery in Taraimar Coal Block in Mand Raigarh coal field. The project site is located in the Northern part of Mand Raigarh, near Dharamjaygarh town of Raigarh district in Chattisgarh state. The west boundary of the area is the Eastern bank of Mand River which flows nearby the project site.

The draft EIA/EMP for the proposed project has been prepared by Advance Coal Management and Marketing Private Limited (ACMM) in association with M/S Creative Engineers, Chennai. The report is a technical evaluation of the Environmental Impact Assessment report submitted by the BALCO as part of the clearance process for the 4 MTPA coal mining project along with a 650 TPH of coal washery.

About CSE

Centre for Science and Environment (CSE) is an independent, public interest research and advocacy organisation, which aims to increase public awareness on science, technology, environment and development. The Centre was started in 1980.

For more than two decades, CSE has been creating awareness about the environmental challenges facing our nation. It has been:

- Searching for solutions that people and communities can implement themselves,
- Challenging the country to confront its problems,
- Inspiring it to take action and,
- Pushing the government to create frameworks for people and communities to act on their own.

Background of the EIA report

The Durgapur II Taraimar Coal Block in Mand Raigarh coal field has been allocated to Bharat Aluminium Company Limited (BALCO) by Ministry of Coal, Government of India. According to the report coal extracted will be used in its power plant at Korba for expansion from 810 MW to 1110 MW which is nearly 78 kms away from the mining block. The total mine lease area is 1070 Hectares.

Total mineable reserve is 70.12 Million tonnes for a mine life of 25 years by open cast mining and mineable reserves of 70.07 Million tonnes for 75 years by underground mining (mechanized Bord and Pillar and Blasting gallery systems). BALCO intends to produce 4 Million Tonnes per Annum (MTPA) of coal from this block out of which 3 MTPA from open cast mining and 1 MTPA from underground mining operations.

The total project area of the Durgapur II Taraimar coal block is 1070 Ha out of which 1020.66 Ha are for mining and the remaining are for other facilities such as green belt, infrastructure etc. Apart from this 625 Ha of land is required for setting up of Merry Go Round system for transportation of coal. The minimum and maximum depths of opencast mine will be 62 m and 185 m respectively.

The proposed project also proposes to install a coal washery of 4 million tonnes per annum in the ML area. According to the EIA notification 2006, "*If coal washeries is located within mining area the proposal shall be appraised together with the mining proposal*," It clearly indicates that along with the mine clearance, the proposal for coal washery will be given environmental clearance.

Salient features of the project

Land Use Pattern: The land utilization for the area (page A 3) gives details of the land for mining operations. The break up details are as follows; mine area 1020.66 Ha (95.4%), environment 16.20 Ha (1.5%), coal washery, infrastructure and others 16.50 Ha (1.54%) and green belt as 16.64 Ha (1.55%). The report doesn't describe what kind of environment would lie in the mine area since environment in itself is a very broad term. The report says that 16.64 Ha of land is allotted for the green belt which is a mere 1.55% and against EIA Notification 2006 which prescribes at least 33% of land around such operations to be covered by trees or greenery.

Table 1. Information provided by the EIA report (page A 3)

S.No.	Land Break up for mining operations	Area (Hectares)
1.	Mine area	1020.66
2.	Environment	16.20
3.	Coal washery, infrastructure and others	16.50
4.	Green Belt etc	16.64
	Total	1070.00 Ha

In the next page (page A 4) the break up details of the land is again given as follows:

Table 2. Information provided in the EIA report (page A 4)

S.No.	Land Break up for mining operations	Area (Hectares)
1.	Mine area	1020.66
2.	Embankment, Safety zone against Mand river	16.20
3.	For the mine inclines, shaft, washery, service buildings, roads etc	16.50
4.	Green Belt	16.64
	Total	1070.00 Ha

Thus the term environment is replaced here by embankment and safety zone against Mand River which does not constitutes a part of the environment indicating laxity in the preparation of the report.

In the next page (page A-4) of the report is given the land acquisition pattern of the site. The present status of acquisition is private land 600.179 Ha (56.09%), government land 104.765 Ha (9.79%), Chhota Jharke Jungle 56.922 Ha and Bade Jharke Jungle as 308.134 Ha (total forest land - 34.11%). The impact of the mining activity on the agricultural land, government land and forest areas have not been quantified. It is also not given in the report that how much of the forest and agricultural land would be diverted for the mining operations.

No attempt has been made to give the estimated population of the core area. The buffer zone of the proposed area covers 10 km radius from the periphery of the mine block and consists of 30 villages from 2 tehsils namely Udaipur and Dharamjaigarh in Raigarh district. There are around 8916 households in the buffer zone and the total population is 41,484 (as per 2001 census). The buffer zone is majorly a rural area and no effort has been made to assess the impacts of the mining activity on the population in the buffer zone (page 3-5 and 3-6). There are around ten reserved forests and ten water bodies (see para 3.1.1. in page 3-3 and 3-4) in the buffer zone which would have obvious impacts of the mining activity but EIA has failed to quantify these impacts.

Impact on Topsoil: The EIA report discusses very superficially about the management of topsoil (page 4-42) which is one of the most prominent issues to be addressed in such an activity. The topsoil takes millions of years to form and ought to be preserved. The report says that the top soil would be extracted and stored separately, prior to excavation by using dozer and front end loader. It will be then spread over dumps for the purpose of reclamation of wasted land. There is no information as to how the top soil would be extracted and what would be the mode of storage. There is also no data on the quantity of the topsoil that would be removed from the mining site. According to CSE estimate if 1020 Ha of land is used for mining and the thickness of topsoil is 0.5m then topsoil generated would be around 5.1 million cu. m. which indicates a substantial removal of one of the most precious resource.

Impact on Mand River: The mine lease is a part of the catchment area of the Mand River hence river siltation will be the biggest threat anticipated. The EIA report is completely silent on the issues of siltation and the impact of loss of drainage system. Reduction in the River flow can also be anticipated due to increase in depth of open cast mine and reduction in the catchment areas by mining activity.

Impact on the groundwater resources: The water requirement given in the report gives details of water usage in the mine lease area. The total water requirement is given as 1040 m3/day. It gives water usages in areas like water sprinkling, fire fighting, green belt, coal washery and drinking & domestic use (page A 8). It also says that about 9 m3/day of water is required in water shop but gives no details as to what would be its usage in it. **The report specifies that around 4700 m3/day of water has to be pumped out to cope with mine seepage**. This water would be used for the industrial requirement which amounts to 1040 m3/day including the drinking water which will be extracted from the bore wells. EIA fails to give how it arrived at this figure of 4700m3/day and what treatment methods they'll employ to treat this water. The quantity of seepage water is very high and the report says that that the water remaining after use would be discharged in the Mand River which is not a good practice to follow. Also the huge quantity of seepage water would exert a pressure on the existing groundwater regime. The report says that ground water extraction is negligible and there would be no impact on water potential however the mine seepage also accounts for ground water and it is substantially high in the region (page A 9).

Impact on Biodiversity: Impact on biodiversity is poorly presented in the EIA. Although large tracts of land in the mining site are covered by forests there is no information on the impacts of mining activity on the forests and flora and fauna. The report just gives a list of flora and fauna found in the area without quantifying the impacts on the same. It says that there are no migratory corridors, ecologically sensitive areas within 15 km of the study area (page 3-4). However a **study by R.K.Singh (2002) 'A Rapid Assessment of the Human Elephant Conflict in Chattisgarh' indicates that conflicts between human and elephants have been observed in areas like Dharamjaigarh (which lies in the buffer zone i.e. within 10 Km of the mining site)**. Thus EIA has loosely stated that no migratory corridors and sensitive areas are found within 15 km of the project site (page 3-4)

Apart from the core area which constitutes of around 34% of area under forests the buffer zone also constitutes about 44% of the forests which would certainly be impacted by the mining activity.

Misleading Information: The TOR for the coal washery in the EIA report discusses about the latest state of the art technology to maintain the ash content of the coal to 40% but does not provide any information about the technology that the company would use for the purpose. The washery claims to achieve zero discharge but does not explain how it will achieve it. The total water requirement of the washery (440m3) is said to be achieved by mine seepage water (page 11-8).

Around 967.28MM3 of solid waste generated from the open cast mining, 38.32MM3 generated in the initial years is said to be dumped externally and rehandled into the mine void later. There are no details as to how it would be stored. Also during the duration of its storage it would impact the air quality by wind erosion and it is also anticipated that the river Mand lying in the

catchment would get affected by the overburden dump in case of rainfall which EIA has not quantified. There are no details on the vehicles used for rehandling the solid waste; the cost of dumping is also not enumerated in the EIA report.

The stripping ratio for the mining activity is also high to the tune of 1:13.79 (tonnes: cubic metre) (page 2-9) indicating a huge generation of solid waste in the mining activities.

In the section talking about underground mining it is said that subsidence would be observed however in the Bord and Pillar form of mining subsidence is not observed (subsidence is more pronounced in long wall mining). It is said that for filling of surface blocks formed due to subsidence adequate filling material would be used. No information is provided on the quantity and the type of filler materials. No details are also given about the aquifers present in the underground mining area. Information is also not provided about the depth of these aquifers, the quantity of seepage water from underground mining, characteristics of the seepage water from underground mining and measures to handle this water. Thus EIA fails in this aspect.

Page number 2-26 of the EIA report says that the drain and rinsed clean coal shall be fed through a set of conveyors to a washed coal storage bunker and proportionately blended with the unwashed fines and the unwashed seam IX coal. However there is no mention of seam IX in the mining schemes discussed above. A table given on the page no. 2-8 gives a distribution of reserves seam wise and grade wise. The table list only five seams namely II, III, IV, V and VA There is another error in the same paragraph which says that the blended coal shall be transported through a series of belt conveyors to a ring granulator for crushing to 20mm size and then conveyed through a pipe conveyor to the power plant. Earlier in the article the report mentioned that the coal from the mines would be transported to the power plant through a Merry Go Round system since the power plant is nearly 78 km away from the mine area. Thus above two indicates a **cut and paste job** on the part of consultants.

For the transportation of coal from the mines to the power plant the company has envisaged to employ a Merry Go Round (MGR) system. The report says till the commissioning of MGR the transportation to the power plant would be carried out by road. It is not given in the report when the proposed system will get initiated and how long the transportation by road would take place. The land required for the MGR system is said to be 625 Ha out of which major portion of the land is forest (including both protected and general forest land). The impacts of the transportation system on the forest and private land are not discussed in the report. (page 4-21). It is obvious that the transportation of coal by road would enhance the particulate emissions and affect the ambient air quality. Also road transportation would exert a pressure on the existing traffic of the region. These issues have not been discussed in the EIA.

Another discrepancy in the project can be found in the distribution of land pattern of the buffer zone. In page no. 3-46 the total buffer zone area is divided as follows:-

Table 3. Information provided in the EIA report

	Area in Ha	In %
Forest land	11423.0	44.04
Irrigated land	628	2.42
Un-irrigated land	7943	30.62
Cultivable waste land	3068	11.83
Land not available for cultivation	2878	11.09
Total	**25940.0**	100

According to this table the total land of the buffer zone is 24940 Ha. However the satellite imagery details (page 3-48) show that the total area is around **454.54 Ha** which is a huge difference is showing lax in the preparation of the report.

Social Impacts of the project: The EIA report says that there will be around 575 home oustees and 544 land oustees due to the proposed mining operation. This indicates that there will be huge impact on the socio economic infrastructure of the region. There are no details of how this data have been generated. The data used to access the social impacts are also very old (2001 census). No details of the compensation that would be provided are given in the EIA (page 4-52). Apart from the core area the population of around 41,484 residing in the buffer area would also be impacted directly or indirectly by the mining activities which is not quantified in the report.