

No. J-11015/100/2011-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex,
New Delhi-110510.

To

Dated: 27th June 2011

CGM (E&F),
M/s Bharat Coking Coal Ltd.,
Koyla Bhawan,
DHANBAD

Sub: Cluster XV (4 UG mines with a normative prodn. of 0.325 MTPA with a peak prod. of 0.423 MTPA in a combined ML area of 1696.55 ha) of M/s BCCL located in Jharia Coalfields, dist. Dhanbad, Jharkhand - Terms of Reference (TOR) – reg.

Sir,

This is with reference to letter no. 43011/12/2011-CPAM dated 5th April 2011 which was considered in the EAC (T&C) meeting held on 23rd -24th May 2011. It was informed that the cluster XV consists of 4 UG mines of a combined production capacity of 0.325 MTPA with a peak capacity of 0.423 MTPA in a combined ML area of 1696.55ha. River Damodar forms the southern boundary. The cluster is bounded in the east by Khudia nala, in the west by metamorphic, in the North by Barakar Formation and D.C. Railway line and in south by Raniganj formation. The land within the cluster is degraded with presence of unstable sites due to more than 100 years of mining. The cluster is drained in East by Khudia Nala flowing Southerly. Damodar River and Jamunia River are 5 km and 2 km away from proposed cluster XV. The cluster consists of 3 adjacent UG mines which are working and one closed UG mine. Out of 595 unstable sites identified in the Jharia Master Plan, 18 sites consisting of 1537 PAFs are affected due to instability of sites, however, the cluster does not have fire problems. It was informed that R&R would be implemented in 2 phases at an estimated cost of Rs. 100.36 crores. The company has identified land of 7.110 ha area for the BCCL population and an area of 27.052 ha for the non-BCCL population. It was clarified that there is no forestland in the cluster and no additional land is to be acquired as entire operations would be UG. It was informed that cluster XV would have common transport network of railways, safe rehabilitation as per Jharia Action Plan, common and effective mitigative measures of environment pollutants and green belt can be developed all around the cluster and along the banks of Khudia nala. No forestland is involved. It was informed that the Environment Management plan for the cluster would be dovetailed with Jharia Action Plan for dealing with fire, subsidence and rehabilitation of people. The affected families will be rehabilitated in an adjacent non-coal bearing area in two phases. It was stated that no fresh acquisition of additional land is required. It was informed that CSR would be taken up @5/T of coal produced.

MINES IN CLUSTER XV					
S.No	Name of Mine	Production capacity (MTPA)		ML (ha)	Life of Mine (years)
		Normative	Peak		
1	Kharkharee Colliery Mine	0.092	0.12	584.00	>30
2	Madhuband Colliery	0.113	0.147	393.77	>30
3	Phularitand Colliery	0.120	0.156	340.88	>30
4.	Dharma band Colliery (closed for production)	0	0	377.90	-
	Total	0.325	0.423	1696.55	

Production in Cluster XV

	Production level in MTPA			
Year	Madhuband UG Mine	Phularitand UG Mine	Kharkharee Colliery UG Mine	Dharmaband Colliery UG Mine (closed for production)
1993-94	0.107	0.078	0.080	-
2009-2010	0.016	0.033	0.054	-
Peak production	0.147	0.156	0.12	-

COMBINED LAND USE OF CLUSTER-XV			
S.No	Type Land Use	Present Mining Land Use (ha)	Post-mining Land Use (ha)
1.	Service building/ mine infrastructure	17.36	0.00
2.	Coal dump	3.8	0.00
3.	Road & Rail	101.67	101.67
4.	Homestead land	81.81	81.81
5.	Fallow land	352.38	352.38
6.	Plantation	12.80	604.96
7.	Water body	45.37	45.37
8.	Barren land	1081.36	510.36
	Total	1696.55	1696.55

Details of Rehabilitation in Cluster XV

S. N.	Parameter	Details
1.	Total Voids	NIL
2.	Total OB available	NIL
3.	Total Unstable Sites	18 no.
4.	Total Affected Areas	0.49km ²
5.	No. of Houses to be rehabilitated	1537 no. as per JAP
6.	Land for Resettlement	7.104 ha (BCCL land) 27.052 ha (Non-BCCL land)
7.	Total Cost of resettlement	Rs.14002.80 lakhs
8.	Reclamation/mine closure	Additional plantation on 592.16 ha Rs.1696.55lakhs (fund allocated for mine closures as per MOC guidelines and adopted by BCCL @Rs.1 lakhs /ha in case of UG mines)
9.	CSR Activities	Rs 16.25 lakhs per year (Fund allocation for CSR as per CIL guidelines and adopted by BCCL @Rs 5/T of Coal produced).
10.	Environment protection	1.79 crores/Yr and @Rs 2.50/T of coal produced

The Committee also desired that transportation of coal to Madhuband washery needs to be taken up in an integrated manner. The Committee desired that the 532 PAF's who are proposed to rehabilitated in Phase –II , houses be also rehabilitated in first 2-5 years i.e. in Phase-I. The Committee desired that the

details of Jharia Action Plan involving resettlement of habitation from unstable sites within the cluster should be integrated with EIA-EMP study report for the entire cluster along with clear time lines of the schedule of implementation. The Committee desired that R&R involving **1537** PAFs living in unstable locations within the cluster, for which the Jharia Action Plan has been formulated, should be included. Post-monitoring of R&R for its proper implementation should also be carried out by PP. The Committee also desired that a detailed CSR Plan for the entire cluster and @Rs 5 per tonne of coal to be earmarked for activities under CSR. The Committee further desired that for monitoring of the proper implementation of CSR activity the company should create, a dedicated multidisciplinary team of local people including the social scientists/sociologists. The Committee desired that the details of areas under Mining Rights and under Surface rights and their land use should be provided in the EIA-EMP Report.

Based on the application along with documents and presentation thereon and discussions held, the Committee prescribed the following TOR:

- (i) An Integrated EIA-EMP for **Cluster XV (4 UG mines of combined prod. capacity of 0.325 MTPA with a peak production of 0.423 MTPA in a combined ML area of 1696.55 ha)** shall be prepared clearly bringing out the present status of environmental quality and the extent of pollution load from each mine and the combined load from the cluster of mines that would be reduced by taking suitable mitigative measures for the individual mines and for the cluster and the expected improvement in the environmental quality of the mines in the cluster and within the coalfield after the implementation of the measures through an Integrated Environmental Plan formulated on the aforesaid basis. A fresh baseline data on the env. quality shall be generated on the new NAAQM Notification. Baseline data collection shall be for any season except monsoon. Details of the present land use and post mining land use of the operating and abandoned mines individually and as a cluster shall be furnished as part of the EIA. A detailed Mine Closure Plan and a Mine Reclamation Plan for the abandoned mines (UG and OC)/pits/quarries found in the cluster shall be furnished as a part of EIA-EMP study. The closure of UG mines should ensure that no illegal mining is done thereafter from the mines. Details of long term benefits to environment because of cluster approach of mining shall be clearly addressed in the EIA-EMP study. In addition to the above, details of an Action Plan for project specific R&R and CSR shall also be formulated and presented in the EIA-EMP. The Committee desired that the details of Jharia Action Plan involving resettlement of habitation from unstable sites within the cluster should be integrated with EIA-EMP study report for the entire cluster along with clear time lines of the schedule of implementation.
- (ii) The Integrated EIA-EMP shall incorporate an Environmental Action Plan for mitigating the environmental degradation existing in the cluster and for improvement of the environmental quality (air, water and land) so that the region (Dhanbad), which is presently critically polluted, shows discernible improvement of its environmental quality.
- (iii) The Integrated EIA-EMP Report to be prepared on a cluster approach shall cover **Cluster XV (4 UG mines of combined prod. capacity of 0.325 MTPA with a peak production of 0.423 MTPA in a combined ML area of 1696.55 ha)** based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (iv) The Integrated EIA-EMP Report would be prepared for **Cluster No XV** to cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality – air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts. Baseline data collection can be for any season except monsoon.
- (v) A map specifying locations of the State, District and Project location.
- (vi) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources.
- (vii) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.

- (viii) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (ix) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.
- (x) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., approach roads, major haul roads, etc.

In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.

- (xi) Break up of lease/project area as per different land uses and their stage of acquisition. The Committee desired that the details of areas under Mining Rights and under Surface rights and their land use should be provided in the EIA-EMP Report.
- (xii) Break-up of lease/project area as per mining operations.
- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM_{10} , $PM_{2.5}$, SO_x , NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil.
- (xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable.
- (xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the project falls within 15 km of an ecologically sensitive area, then a comprehensive Conservation Plan should be prepared and furnished along with comments from the CWLW of the State Govt.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and final mine closure plan should also be shown in figures.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.
- (xix) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.
- (xx) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

- (xxi) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.
- (xxii) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.
- (xxiii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term modelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxiv) Impact of blasting, noise and vibrations.
- (xxv) Impacts of mineral transportation – within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.
- (xxvi) Details of waste generation – OB, topsoil – as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OB dump heights and terracing should be based on slope stability studies with a max of 28° angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxvii) Impact and management of wastes and issues of rehandling and backfilling and progressive mine closure and reclamation.
- (xxviii) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.
- (xxix) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.
- (xxx) Disaster Management Plan.
- (xxxi) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxxii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF). And selection of species (local) for the afforestation/plantation programme based on original survey/landuse.
- (xxxiii) Final Mine closure issues, post mining land use and restoration of land/habitat to pre-mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions. The Committee desired that the abandoned quarries/mined out pits/voids left over from the pre-nationalisation period should be properly backfilled and biologically reclaimed in to either plantation or restored to agricultural land. The Committee desired that details of land use end of mine life and post mining be furnished in the standard tables prepared by MOEF. In case, exploration does not indicate sizeable reserves, the proponent may consider surrendering the lease after completion of reclamation of the abandoned mines and worked out OC and UG mines.
- (xxxiv) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.
- (xxxv) The Committee desired that a detailed project specific R&R Plan for the **1537 PAFs** who are proposed to be rehabilitated. R&R for Phase –II comprising of 532 PAFs houses be also rehabilitated in first 2-5 years i.e. in Phase-I. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan. The Committee desired that R&R living in unstable locations within the cluster, for which the Jharia Action Plan has been formulated, should be included. Post-monitoring of R&R for its proper implementation should also be carried out by PP.

The Committee also desired that a detailed CSR Plan for the entire cluster and @Rs 5 per tonne of coal to be earmarked for activities under CSR. The Committee further desired that for monitoring of the proper implementation of CSR activity, a dedicated team of local people including the social scientist / sociologist (male and female) and multidisciplinary people should be formed/created by company.

- (xxxvi) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxxvii) In built mechanism of self-monitoring of compliance of environmental regulations.
- (xxxviii) Status of any litigations/ court cases filed/pending on the project.
- (xxxix) Submission of sample test analysis of:
Characteristics of coal - this includes grade of coal and other characteristics – ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxx) Copy of clearances/approvals – such as Forestry clearances, Mining Plan Approval, NOC form Flood and Irrigation Dept. (if req.), etc. The matter of appraisal of project closed for production is for integrating the environmental concerns of the cluster.

The following general points should be noted:

- (i) All documents should be properly indexed, page numbered.
- (ii) Period/date of data collection should be clearly indicated.
- (iii) Authenticated English translation of all material provided in Regional languages.
- (iv) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
- (v) The letter/application for EC should quote the MOEF file No. and also attach a copy of the letter prescribing the TOR.
- (vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
- (vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Mining Questionnaire (posted on MOEF website) with all sections duly filled in shall also be submitted at the time of applying for EC.
- (viii) MOEF Circular dated 22.03.2010 may kindly be referred to regarding time limit for validity of Terms of Reference (TOR) prescribed under EIA Notification, 2006 for undertaking detailed EIA studies for development projects requiring environmental clearance.

After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, and the public Hearing conducted as prescribed in the EIA Notification 2006 and the proponent will take necessary action for obtaining environmental clearance under provisions of the EIA Notification 2006.

Yours faithfully,

(Dr.T.Chandini)
Director

Copy to: Member-Secretary, Jharkhand State Pollution Control Board, TA Building, HEC Complex, P.O. Dhurva, Ranchi - 834002.