



COST BENEFIT ANALYSIS REPORT

[As per MoEF &CC Guideline 7-69/2011-FC (Pt.) dtd. 01 August, 2017]

Chandragupt OCP (15 MTY) (699.38 Forest Land)



**Chandragupt Open Cast project
Amrapali & Chandragupt Area
Central Coalfields Limited
(A Miniratna Company)**

Chandragupt OCP (15 MTY) (699.38 Ha)

Handwritten signature and date 29/12/23

1.0 Introduction:

Chandragupta OCP (15 MTY): Chandragupta OCP (15 MTY) - The Chandragupt OCP having an area of 14.95 sq km, is located in the northern part of North Karanpura Coalfields in Hazaribagh district of Jharkhand falls within Pachra and Pachra South Geological Blocks. The Barki river flows in western side of the blocks. The Amrapali OCP boundary is in the western side of Barki river. The block is covered by different land types viz. forest, tenancy, GMK, GMA and JJ. A high-level bridge over Barki river needs to be constructed to connect the proposed OCP with Amrapali OCP. Considering the geo mining characteristics of the mining block, opencast method of mining with shovel – dumper combination is proposed to work here.

2.0 Communication:

Name of Project Officer	Shri Subhash Chandra Gupta
Address	Office of the Project Officer VTC Bhawan, Honhe Amrapali Chandragupt Area
Mobile no.	
Email Address	po.chandragupta@coalindia.in

3.0 Purpose for Cost benefit analysis: Cost benefit report is required for making on line application in Part I of FORM A at pt no. G (i) (a). The report has been prepared on the basis of MoEFCC circular no. 7-69/2011-FC(Pt.) dated. 01 August 2017. (Copy Attached as Annexure A).

	Total Area as per forest Application	Forest Land as per Application	Notified Forest as per Application	GMK JJ/Revenue Forest as per Application	Non Forest Land as per Application	Life of mine in Yrs
Chandragupt OCP	1495	699.38 Ha	536.69 Ha	162.69 Ha	795.62	41

Table 1(b): Detail of Household shifting

No. of vill. to be rehabilitated	Name of village to be Rehabilitated	No. of Project affected person (Estimated)	No. of PAF to be shifted at R&R site
7	Bukru, Chatti bariyatu, Jordag, Nawakhap, Pachanda, Sijhua, Ursu	7618	1610

**Table 2 (a): Current NPV Rates
Eco Value Class: Class III**

Forest type group: Tropical dry deciduous forest

Current NPV rates (Rs. per Ha.) as per Letter No.5-3/2011-FC(Vol-I) Dt. 06.01.2022			
Eco Value Class:	VDF	MDF	OF

Class III	13,57,110	12,28,590	9,57,780
Calculation rate for NPV in respect of Chandragupt OCP (Rate of NPV Rs. 12,28,950 for Class III Medium Dense Forest (As reported by DFO))			
Description	Amount in Rs.	Amount in Rs. Lakhs	
Total NPV @Rs.12,28,590 / Ha for 699.38 Ha of the forest land proposed for diversion	12,28,590*699.38 = 85,92,51,274	8592.51	
10% NPV Value	8,59,25,127.40	859.25	
30% NPV Value	25,77,75,382.00	2577.75	
50% NPV Value	42,96,25,637.00	4296.25	

CALCULATION AS PER MOEFCC CIRCULAR NO. 7-69/2011-FC(PT.) Ddt. 01 AUGUST 2017.

I. Estimation of cost of forest diversion

S. No.	Parameters	Remarks	Annexure/Reference
1.	Ecosystem services losses due to proposed forest diversion	Rs. 8592.51 Lakhs Total NPV @Rs.12,28,590/Ha for 699.38 Ha of the forest land proposed for diversion= Rs. 85,92,51,274.00 Economic value of loss of ecosystem services due to diversion of forest = Net present value (NPV) of the forest land being diverted = Rs. 8592.51 Lakhs.	As per Cost Benefit Analysis Guidelines for forest land diversion published vide MoEFCC7-69/2011-FC(Pt.) Dt 01-08-2017
2.	Loss of animal husbandry productivity, including loss of fodder	Rs. 859.25 Lakhs 10% of NPV is to be taken which is Rs. 859.25 Lakhs.	As per Cost Benefit Analysis Guidelines for forest land diversion published vide MoEFCC7-69/2011-FC(Pt.) Dt 01-08-2017
3.	Cost of human resettlement	Rs. 21360.17 Lakh a. Cost of Land acquisition for resettlement = Rs. 14574.17 Lakh b. Monetary benefits to Project displaced families = Rs. 5545 Lakh c. Cost of R&R site development = Rs 1241 Lakh	As per Final EIA EMP report of Chandragupta OCP

		Total: a+b+c = 21,360.17 Rs. Lakh	
4.	Loss of public facilities and administrative infrastructure (roads, buildings, schools, dispensaries, electric line, railways, etc.) on forest land which would require forest land if these facilities were diverted due to the project.	1127 crores	Diversion of a road of total length of 3.25 Km (3250mtrs X 35000Rs/mtr)
5.	Circle rate of adjoining area, land cost paid to Govt of Jharkhand for obtaining NOC of GM-JJ land or Possession value of forest land diverted	Rs. 20418.43 Lakh a. As per the circle rate the possession value = Rs. 10,889.52 Lakh b. Land cost paid to obtain NOC in respect of GMJJ land as per Govt of Jharkhand order dated 17.12.2019 = 9111.67 Lakh + 417.24 Lakh = 9528.91 Lakh Total possession value of forest land = a+b = 20418.43 Lakh As per MoEFCC guideline 30% of environmental cost (NPV) due to loss of forest = Rs. 2577.55 Lakhs As per the MoEF&CC guideline the higher cost is to be considered as such Possession value of forest land = 20418.43 Lakh	Circle Rate as per records of District Registry Office.
6.	Cost of suffering of oustees	Rs. 11030 Lakhs As per MoEFCC guideline the social cost of rehabilitation of oustees (in addition to the cost likely to be incurred in providing residence, occupation and social services as per R&R plan) be worked out as 1.5 times of what oustees should have earned in two years has he not been shifted. As per letter no. 2/MW-2071/2010,L&T-684 Ranchi, dated 10.04.2023 minimum wage is Rs.	As per Cost Benefit Analysis Guidelines for forest land diversion published vide MoEFCC7-69/2011-FC(Pt.) Dt 01-08-2017

		346.01 (Rs. 274.81 +71.20) w.e.f. 01.04.2023. Therefore, Total Cost of suffering of oustees = $346.01 * 330 * 2 * 3220 * 1.5 = \text{Rs. } 11030 \text{ Lakhs}$	
7.	Habitat Fragmentation cost	Rs. 4296.25 Lakhs Cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule.	As per Cost Benefit Analysis Guidelines of forest land published vide MoEFCC7-69/2011-FC(Pt.) Dt 01-08-2017
8.	Cost of Compensatory Afforestation, Soil & moisture conservation cost and Wildlife management Cost	Rs. 3482.75 Lakhs Compensatory Afforestation: $214190.11 * 2 * 699.38 = \text{Rs } 2996 \text{ Lakhs}$ Soil Conservation cost = 0.5% of the Project Cost = $0.005 * 97350.17 \text{ Lakh} = 486.75 \text{ Lakh}$ Cost of Wildlife Management Plan = 2% of the Project Cost = 1947 Lakh Total Cost = 2996 Lakh + 486.75 Lakh + 1947 Lakh = 5429.75 Lakh	Rate of CA as per demand note issued in recent years by State Forest Department. WLMP and SMC Cost is as per the MoEf&CC guideline dated 07.06.2022
Estimated Cost of Forest Diversion		71,166.36 Lakh	

II. Estimation of Benefits of forest diversion

S. No.	Parameters	Remarks	Annexure/Reference
1.	Increase in productively attribute to the specific project	Rs. 17,06,290 Lakhs = Profit /tonne * Mineable Reserve = $323.59 \text{ Rs/Tonne} * 527.30 \text{ Million Tonne} = \text{Rs. } 17,06,290 \text{ Lakhs}$	Approved Project Report of Chandragupt OCP (15 MTY)
2.	Benefits to economy due to specific project	Rs. 12,97,667.28 Lakhs a. Royalty Charges (14% of Selling price) = $0.14 * 1023.25 \text{ Rs./tonne} * 527.30 \text{ Mt} = 7,55,383.61 \text{ Lakh}$ b. National Mineral Exploration Trust (NMET) Charges (2% of royalty) = Rs 15,107.67 Lakh c. DMF (30% of royalty) = Rs 2,26,615 Lakh d. Forest Transit Fee (Rs. 57 per tonne) = Rs 3,00,561 Lakh	

		Total = Rs 12,97,667.28 Lakhs	
3.	No. of population benefitted due to specific project	2068 (Direct Employment = Permanent + Contractual)	
4.	Economic benefits due to direct and indirect employment due to project	Rs. 6,81,700.68 Lakhs Economic benefits due to direct employment = Mineable Reserve X Salary & Wages Rate Cost/te = 527.30 X 37.48 X 10 = Rs 1,97,632 Lakh Economic benefits due to indirect employment due to project = 5 Times of direct employment X Per day Wages X No. of working day in year X Life of mine = 5 x 2068 x 346.01 330 x 41 = 4,84,068.68 Lakh	
5.	Economic benefits due to Compensatory Afforestation	Rs. 3791 Lakhs Area of CA land X (NPV value of Moderately dense Forest – NPV value of Open forest) 1400 X (1228590-957780) = 3791 Lakh	NPV value of the CA land so identified will increase from that of an open forest to that of Moderately dense forest
Estimated Benefits of Forest diversion		36,89,448.96 Lakh	

The Cost to benefit ratio is the ratio of estimated cost and estimated benefits,

The cost to benefit ratio for this forest proposal comes out as under:

Total estimated Cost due to diversion of forest in Rs. lakhs	Total estimated benefits due to project in Rs. Lakhs	Cost to benefit Ratio
71,166.36	36,89,448.96	1:51.84