



**COST BENEFIT ANALYSIS  
FOR GARE PALMA IV/5 COAL MINE  
Vill+ PO-Milupara, Dist. Raigarh, Chattisgarh**

**(A) Abstract of Financial (tangible only) benefits from the Project:**

S. No.	Item	Financial Benefit (in Crores of Rupees)
1	Sale value of Goods / Services	NA *
2	Royalty	37,631 **
3	Sales Tax	7,510 ***
4	Employment Generation	9379 ****
5	Transportation	6.510 *****
6	Secondary & Tertiary Fiscal Benefits	NA
7	Miscellaneous	NA
	<b>Total</b>	<b>61,030 Crores</b>

\* Sales Value of Goods / Services: The Applicant is a captive coal Mines, hence not applicable.

\*\* Royalty: This disclose all the statutory payments i.e. Monthly Payment (Premium), Royalty, DMFC and NMET.

\*\*\* Sales Tax: Currently Known as GST and Cess

\*\*\*\* Engagement of 450 employees per day for operation & maintenance for 300 days in a year up to 85 years of project life gives a figure of 1,14,75,000 Mandays (450 X 300 X 85). Taking Rs 8174/- per day as average daily wages rate against the present wages rates of Rs. 558/- as approved by Chhattisgarh State Govt. for skilled labor (taking 5% escalation year on year up to 85 years) a figure of Rupees 9379 Crores is reached at.

\*\*\*\*\* Transportation: Coal transportation cost from Mines to End User Plant of Hindalco Industries Ltd,

**(B) Abstract of Evaluation of Loss of Forest**

S. No.	Item	Financial Loss (in Crores of Rupees)
1	Evaluation of loss of Timber/Fuel/Bamboo/NTFP	0.10*
2	Human Resettlement	Nil
3	Loss of Fodder	0.10**
4	Loss of Public Facilities	Nil
5	Environmental Loss	162.09***
6	Suffering to Oustees	Nil
	<b>Total</b>	<b>162.29 Crores</b>

**Hindalco Industries Limited**

Gare Palma Mines ( IV/4 & IV/5), Vill & Po: Milupara , Tehsil: Tamnar Dist: Raigarh- 496107 , Chhattisgarh

T: +91 7762 228212, Website : www.hindalco.com E mail : hindalco@adityabirla.com

Registered Office : Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road Andheri (East) , Mumbai 400093, India

T: + 912266917000 | Fax: + 912266917001

Corporate ID No: L27020MH1958PLC011238

- This calculation was arrived as follows:  
\*An average of revenue from timber, fuel & minor forest produce for the last five years for Raigarh Forest Divisions was obtained from Raigarh DFO. The average annual revenue was divided by the total forest area of Raigarh Forest Division & multiplied by 319.73 Ha, the proposed diversion area we get a figure of 0.10 lac Rupees.

\*\* Since actual figures of fodder loss were difficult to arrive at, it can be safely assumed that the loss due to fodder would never be greater than the combined loss by timber & fuel wood. Hence an equivalent figure as arrived at in the above step was utilized for the purpose.

\*\*\* The value of environmental losses (soil erosion, adverse impact on soil moisture regime, effect on hydrological cycle, loss of wildlife habitat, impact on microclimate, degeneration of site quality, disturbances to ecological stability etc.) was computed on the basis of the assumed value of Rs. 126.74 lakhs / ha. for fully stocked forest (density 1.0). This is the usually accepted figure in forestry circles. The density of the proposed diversion area of 319.73 Ha varies from complete blanks to 0.6. Hence an average of 0.4 was taken. Hence the value of environmental losses arrived at is Rupees 162.09 Crores (1.2674 X 0.4 X 319.73).

### (C) Abstract of Project Cost:

S.no.	Item	Financial Outlay (in Crores of Rupees)
1	Fixed Assets	837
2	Investments	NA
3	Current Assets, loans & Advances	NA
4	Miscellaneous Expenditures	NA
	Total	<b>837 Crores</b>

\* All estimations have been done for the Life of Mine

Cost: Benefit Ratio

- I. Cost of Project (including loss of forest) = B+C = 162.29 + 837 = 999.29
- II. Financial Benefits of the project = A = 61,030

$$\text{BENEFIT: COST Ratio} = A / (B+C) = 61.1$$

Place: RAIGARH  
Dated:-----

For Gare Palma IV/5 Coal Mines.

~~Hindalco Industries Limited~~

*(Vivek Mishra)*

Authorized Signatory

12/07/19