

**Forest Diversion Proposal (9.69 Ha) for Bagru Bauxite Mine at Village-Bagru, Tehsil-Kisko, District-Lohardaga, Jharkhand by M/s Hindalco Industries Ltd.
(Proposal number: FP/JH/MIN/155456/2022)**



COST BENEFIT ANALYSIS

Prevailing Rates of NPV

As per revision of rates of NPV applicable for different class/category of forests issued by MoEFCC File No. 5-3/2011-FC(Vol-I) dated 06.01.2022, the following NPV have been prescribed for levying NPV in lieu of diversion of Forest land.

Forest type group: Tropical dry deciduous forest

Table: Rates of NPV values

NPV (in ₹/Ha.)			
Eco-Value class	Very Dense	Dense	Open
Class I	1595790	1436670	1116900
Class II	1595790	1436670	1116900
Class III	1357110	1228590	957780
Class IV	957780	861390	670140
Class V	1436670	1292850	1005210
Class VI	1516230	1372410	1069470

For the proposed project the Eco value class of forest is **class III i.e. Tropicallly Dry Deciduous Forest** and falls under **dense forest category**.

In view of the same, NPV amount of **₹12,28,590 per Ha.** Shall be considered for the project.

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A. ESTIMATION OF COST OF FOREST DIVERSION

SN	Parameters	Remarks	Cost (₹)
1	Ecosystem services losses due to proposed forest diversion	Economic value of loss of eco-system services due to diversion of forest- NPV amount calculated as Rs. 12,28,590 per Ha for 9.69 Ha of proposed forest land for diversion	1,19,05,037
2	Loss of animal husbandry productivity, including loss of fodder	There is no significant animal husbandry productivity or loss of folder. However, 10% of NPV cost has been considered.	11,90,504
3	Cost of Human Settlement	No displacement of population is anticipated for the project. Hence no cost to be earmarked.	Not applicable
4	Loss of public facilities and administrative infrastructure (roads, buildings, schools, dispensaries, electric lines, railway lines etc.) on forest land or which would require forest land, if these facilities were diverted due to the project	No public facilities to be affected by project.	Not applicable
5	Possession value of the forest land diverted.	30% of environment cost (NPV) due to loss of forest or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land whichever is maximum.	35,71,511
6	Cost of suffering of oustees.	No person to be displaced or resettled.	Not applicable
7	Habitat fragmentation cost.	Habitat Fragmentation cost as per MoEFCC guidelines to be taken as 50% of NPV applicable as a thumb rule.	59,52,518
8	Compensatory afforestation and soil moisture conservation cost	CA rates as per Govt of Jharkhand including Plantation and Maintenance for 5 years (Rs. 96,775 per Ha.)	9,37,750
TOTAL(A)			₹ 23,555,320

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B. BENEFIT OF FOREST DIVERSION

1. Increase in productivity attribute to the specific project

Minerals	Estimated Reserve (tones)	Rate per ton (₹)	Total revenue (₹)
Bauxite	887,000	2,959.37	2,624,633,000
Kaoline	12,67,000	570	72,21,90,000
Total			3,346,823,000

2. Benefits to economy due to specific project

Minerals	Royalty Amount (₹)	DMF (₹)	NMET (₹)	Covid Cess (₹)	Total revenue(₹)
Bauxite	24,60,89,821	7,38,26,946	49,21,796	1,77,40,000	34,25,78,563
Kaoline	5,77,75,200	1,73,32,560	11,55,504	0	7,62,63,264
Total					418,841,827

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3	No. of population benefited due to specific project	<ul style="list-style-type: none"> • Direct: Nil • Indirect: 76800 Mandays • Employment generated on non – forest land in afforestation programme • Locality people will have income opportunity in various ancillary work & other activities
4	Economic benefits due to direct and indirect employment due to the project	Direct- Nil Indirect: 76800*₹443 per manday= ₹ 3,40,22,400
5	Economic benefits due to compensatory afforestation	Land for compensatory afforestation =9.86 Ha. 1.Current NPV value of Land= 9.86 x ₹9,57,780 (NPV for Open forest) = ₹ 94,43,711 /- Future NPV value of land= 9.86 x ₹12,28,590 (NPV for Dense forest)= ₹ 12,113,897 /- <u>Hence additional economic uplift to the forest = ₹ 26,70,186 /-</u> 2.Economic value of carbon storage¹ Change in economic value of carbon storage @ (Rs.2,70,040 - Rs.95,721)/Ha= ₹1,74,319/Ha for 60 years <u>Thus, economic value for 50 years for 9.86 Ha of CA land = ₹ 1,432,321/-</u> Total: ₹ 4,102,507/-
TOTAL(B)		₹ 3,803,789,734

Cost to benefit ratio = (₹ 23,555,320)/(₹ 3,803,789,734)

i.e. 1:161

¹ Revision of rates of NPV applicable for different class/category of forests, IIFM 2014