

Cost Benefit Analysis in respect of Diversion of 150.098 Ha (Reserved Forest 32.475 Ha, Protected Forest 29.181 Ha and Revenue Forest 88.442 Ha) for Brahampuri Coal Mine having area of 360 Ha for underground coal mine captive cement & power plants of Birla Corporation Ltd.

(As per new guidelines No 7-69/2011 – FC(Pt.) dated 01.08.2017 issued by MoEF & CC, Government of India)

Table – A: Cases under which a cost – benefit analysis for forest diversion are required

Sl.No.	Nature of proposal	Applicable/Not applicable	Remarks
1	All categories of proposals involving forest land upto 20 hectares in plains and upto 5 hectares in hills	Not applicable	These proposals may be considered on a case to case basis and value judgement
2	Proposal for defence installation purposes and oil prospecting (prospecting only)	Not applicable	In view of National Priority accorded to these sectors, the proposals would be critically assessed to help ascertain that the utmost minimum forest land is diverted for non – forest use.
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction.	Not applicable	These activities being detrimental to protection and conservation of forest, as a matter of policy, such proposals would be rarely entertained.
4	All other proposals involving forest land more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydro projects, mining activity, railway lines, location specific installations like micro – wave stations, auto repeater centres, TV towers etc	Applicable	The proposed project is for diversion of 150.098 Ha (Reserved Forest 32.475 Ha, Protected Forest 29.181 Ha and Revenue Forest 88.442 Ha) for Brahampuri Coal Mine in the village of Bichhua Pathar, Chhinda, Kukurmunda, Sethia & Sirgoda villages and Forest Block: 61-Thaori of District Chhindawara, Madhya Pradesh.

Table – B Estimation of Cost of Forest Diversion

Sl.No.	Parameters	Remarks	Cost (in Rs.)
1	Ecosystem Service loss due to proposed forest diversion.	Economic Value of loss of ecosystem Services due to proposed diversion of Forest – NPV amount of forest land being diverted as prescribed by Central Government (MoEF&CC).	<p>Economic Value of loss of ecosystem Services due to proposed diversion of Forest shall be Rs 1228590 / Ha (NPV rate as per, File No. 5-3/2011 – FC (Vol - I) of MoEF & CC, Gol dated 06/01/2022.</p> <p>Since the project is Underground hence NPV value is considered at 50%.</p> <p>➤ Total Forest area : 150.098 Ha</p> <p>➤ Environment loss : 150.098 x Rs 1228590 /-</p> <p>50% of Rs 184408901.82</p> <p>= Rs 92204450.91</p>
2	Loss of animal husbandry productivity including loss of fodder.	To be quantified and expressed in monetary term or 10% of NPV applicable whichever is maximum.	Rs 9220445.091
3	Cost of Human Resettlement.	To be quantified and expressed in monetary terms as per approved R & R Plan.	Not Applicable
4	Loss of public facilities and administrative infrastructure (roads, building, schools, dispensaries, electric lines, railway etc.) on forest land, which would requires forest land if these facilities were	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion.	There is no public facilities and administrative infrastructure on the forest land to be diverted. Hence, there is no loss of public facilities.

	diverted due to project.		
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.	Rs 27661335.273/-
6	Cost of suffering to oustees.	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 had he not been shifted.	There will not be any loss on this account as diversion of the forest land to this project will not affect any evacuation of house or structure or human settlement in forest area.
7	Habitat Fragmentation Cost.	While the relation between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule.	Rs 46102225.455/-
8	Compensatory afforestation and soil & moisture conservation cost.	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value.	Not Applicable (Since the project is Underground)

Total cost due to diversion of forest land:
Rs 92204450.91 + Rs 9220445.091 + Rs 27661335.273 + Rs 46102225.455
Rs 175188456.728/-

Table – C Existing guidelines for estimating benefits of forest - diversion

Sl.No.	Parameters	Remarks	Benefits (in Rs.)
1	Increase in productively attribute to the specific project.	To be quantified & expressed in monetary terms avoiding double counting.	12343000 T x Rs 2524 (G-6) Rs 31153732000.00/-
2	Benefits to economy due to the specific project.	The incremental economic benefit in monetary terms due to the activities attributed to the specific project.	*Royalty, DMF, NMET, M.P Infrastructure tax, Forest transit cess amounts to Rs 592.56/- T Rs 7313968080.00/-
3	No. of population benefited due to specific project.		<ul style="list-style-type: none"> ➤ Direct – 600 ➤ Indirect – 1200 ➤ 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 of direct and indirect employment due to the project.		<p>➤ Direct – 600 Rs 100000 x 600 x 12 (months) =Rs 540000000</p> <p>➤ Indirect – 1200 Rs 10000 x 1200 x 12 (months) = Rs 144000000</p> <p>38 years x 684000000</p> <hr/> <p>Rs 2599200000.00/-</p>
5	Economic benefits due to Compensatory afforestation	Benefits from such compensatory forestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of compensatory afforestation.	<p>Compensatory afforestation of 3.691 Ha of land @ 1000no of sapling = survival rate @ 80%.</p> <p>The sapling 3.691/ Ha = 3691 trees</p> <p>Survival trees @ 80% = 2952.80 trees</p> <p>Economic benefits of one tree accruing over next 50 years monetized in terms of providing oxygen, water, soil, moisture conservation, etc, timber & firewood = Rs 200000.</p> <p>Future benefits of 2952.80 nos of trees @ Rs 200000</p> <hr/> <p>Rs 590560000.00/-</p>

Total benefits due to diversion of forest land for non – forest activity:

(Rs 31153732000 + Rs 7313968080 + Rs 25992000000 + Rs 5905600000)

Rs 65050260080.00/-

Cost Benefit Analysis

Based on value of products:

A) Total Benefit to the Society	= Rs 65050260080.00/-
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B) Total Cost to the Society	= Rs 175188456.728/-
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Cost Benefit Ratio	= <u>Total Benefit</u> Total Cost
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Cost Benefit Ratio	= <u>65050260080.00</u> 175188456.728
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= 371.315

For Birla Corporation Limited



(Sandeep Kumar Jain)

Additional Vice President-Mining

Project Authority