

**NORTHERN COALFIELDS LIMITED
JAYANT PROJECT**

**COST BENEFIT ANALYSIS REPORT FOR DIVERSION OF 7.448 HA. OF FOREST
LAND FOR CONSTRUCTION OF COAL TRANSPORTATION ROAD FROM JAYANT
PROJECT TO MORWA RAILWAY SIDING, DIST- SINGRAULI (MP).**

INTRODUCTION

Jayant Opencast Coal Mine of NORTHERN COALFIELDS LIMITED is situated in Singrauli District of Madhya Pradesh. Diversion of 7.448 ha. forest land is required for diversion of road for transportation of coal from Jayant coal mine to Morwa Railway Siding, Singrauli.

COMMUNICATION:

Name of Project Head	:	Shri. Sanjay Mishra, General Manager
Address	:	O/o Area General Manager, Jayant Project, PO-Jayant, Dist- Singrauli, MP- 486890
Phone no.	:	07805-222228
Email Address	:	gmjnt.ncl@coalindia.in

PURPOSE FOR COST BENEFIT ANALYSIS :

Cost benefit report is required for making online application in Part- 1 of FORM-A. The report has been prepared on the basis of cost benefit analysis guidelines for forest diversion '2017' issued by MoEF&CC vide circular no. 7-69/2011-FC (Pt.) dated 01.08.2017.

Forest land- 7.448 ha.- Type- Class-II-Tropical dry deciduous forest of Medium Dense Forest- NPV- Rs. 8.03 lakhs /ha.

Calculation of NPV in respect to Forest land (Rate of NPV Rs. 8.03 Lakh per Ha.)		
Description	Amount in Rs.	Amount in Rs. (Lakhs)
Total NPV for (7.448 Ha. forest land)	5980744.00	59.807
10% NPV Value	598074.40	5.980
30% NPV Value	1794223.20	17.942
50% NPV Value	2990372.00.00	29.903

Calculation As Per MOEF&CC Circular No. 7-69/2011-FC(PT.)Dtd. 01 August'2017

I. Estimation of cost of forest diversion:

S.N.	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion	Rs. 59.807 Lakhs. Economic value of loss of ecosystem services due to diversion of forest = Net present value (NPV) of the forest land being diverted = Rs. 59.807 Lakhs
2	Loss of animal husbandry productivity, including loss of fodder	Rs. 5.980 Lakhs. As per MOEF&CC Circular No. 7-69/2011-FC(PT.) Dated 01 August 2017, 10% of NPV is to be taken which is Rs. 5.980 Lakhs
3	Cost of human resettlement	NIL. No human resettlement is required for diversion of 7.448 ha. forest land.

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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.	NIL. No infrastructure is present in the proposed forest land.
5	Circle rate of adjoining area or Possession value of forest land diverted:	Rs. 74.48lakhs @ 10 lakhs/ha. OR 30% NPV of Forest land = Rs.17.942 Lakhs whichever is higher i.e. Rs. 74.48 Lakhs
6	Cost of suffering of oustees :	Nil. As there is no Project affected person/family
7	Habitat Fragmentation cost :	Rs. 29.903 lakhs. Cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule (Ref Circular MoEF) 50 % NPV = Rs. 29.903 Lakhs.
8	Compensatory afforestation and soil & moisture conservation cost	Rs. 70.299 lakhs @ Rs. 3.514 lakhs/ha. for CA in 20 ha. degraded forest.
9	Construction cost of the Road	Rs. 2019.00 Lakhs
	Total cost of forest diversion (1 to 9) above	Rs. 59.807 + 5.980 +74.48 +29.903 +70.299 + 2019.00 = Total - Rs. 2259.469 lakhs

II. Estimating benefits of forest – diversion under CBA

S.N.	Parameters	Remarks
1	Increase in productive attribute to the specific project .	Can not be quantified. Due to diversion of 4 lane paved shoulder configuration, there will be overall development of the nearby villages. There would be easy and fast movement of the trucks so that it will save fuel and maintenance cost of vehicle. This will also result in reduction in congestion of road, saving travel time and reduction in road accident. Hence, diversion of road will improve traffic condition and will save travel time which will result economic benefit.
2	Benefits to economy due to specific project	1. Reduction of pollution level due to better surface condition of road. 2. Fuel consumption will be reduced. 3. Safety of public on road and reduction in accident. 4. Reduction in vehicle operating cost. 5. Social economic growth of nearby villagers shall be enhanced.
3	No. of population benefitted due to specific project	Indirect Employment = 150 (driver) + 150 Helper+ 100 Mazdoor = 400 Considering avg. family size 4, then no. of Population benefitted = 400 x 4 =1600

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4	Economic benefits due to of direct and indirect employment due to project	Considering average salary/wages of Rs. 20000/- per month for drivers and Rs 10000/- for helpers & labourers
	Indirect employment benefit	$((150 \times \text{Rs. } 20000) + (250 \times \text{Rs. } 10000)) \times 12 = 660 \text{ lakhs/Yr.}$ i.e. for 10 years = Rs 6600 lakhs
5	Economic benefits due to compensatory afforestation:	
(a)	Due to compensatory afforestation 20 ha. degraded forest land (20 x 626000 (NPV for Class III Open Forest) = 20 x 626000 /100000 = Rs. 125.20 lakhs	Rs. 125.20 lakhs
(b)	Due to compensatory afforestation for Carbon storage* = (20 X Diff. of carbon storage for Medium Dense Forest and Open forest for category Tropical dry deciduous forest)/100000 = (20X (270040-95721)) /100000 = Rs. 34.863 lakhs. *Rate for carbon storage for class III forest- MDF- Rs 270040/ha. & Open Forest- Rs. 95721/ha./yr. Source: Revision of rates of NPV applicable for different class/category of forests published by centre for ecological services management (CESM), Indian Institute of Forest Management (IIFM)), Bhopal in collaboration with Forest Survey of India (FSI), Dehradun, Nov. 2014	Rs. 34.8638 lakhs
	Total: (a+b)	Rs 160.0638 Lakhs
	Total benefit	Rs. 6600 lakhs + 160.0638 lakhs = Rs. 6760.0638 Lakhs

Cost Benefit Ratio = Rs. 6760.0638/ 2259.469 = 2.991

Pakshi
26/6/19
Asst. Manager (Env.)

Saini
26/6/19
Nodal Officer (Env.),

Dehury
27/6/19
Staff officer (Mining)

Sharma
27/06/19
General Manager, Jayant Project