

COST BENEFIT ANALYSIS

Project: Diversion of 20.5Ha. of forest land for laying of 132 kV D/C Garhwa - Japla Transmission Line in the State of Jharkhand under the system

- a) Total length of transmission line passing through Forest Length under Medininagar Forest Division = 7.5925 Km.
- b) Total forest area proposed for diversion =20.5 Ha.

Table A- Estimation of cost of forest diversion (as per MoEF&CC Guideline dated 1st Aug 2017 related to cost benefit analysis)

SN	Parameters	Remarks (For Transmission Line)
1	Ecosystem Services losses due to proposed forest diversion	NPV of the forest land being diverted i.e Forest 20.5 ha x Rs. 8.03 lac= <u>Rs.164.615 lac</u> Rs.164.615 lac
2	Loss of animal husbandry productivity including loss of fodder.	Not applicable. Productivity of livestock will not be affected due to construction of transmission line. 10% of NPV Applicable i.e Rs. 16.4615 lac
3	Cost of human resettlement.	Since there is no displacement of people due to the project hence there would be no cost of human resettlement.
4	Loss of public facilities & administration infra-structure (roads,building, school, dispensary, electric lines, railways etc.) on forest land or which would require forest land if these facilities were diverted due to project.	Not applicable, Since these facilities are not available inside the forest area for proposed diversion.
5	Possession value of forest land diverted.	30% of Environmental Costs (NPV) i.e Rs.49.3845 lac
6	Cost of suffering of oustees	Not applicable since there will be no displacement of peoples.
7	Habitat Fragmentation Cost	50% of NPV Applicable as thumb rule i.e Rs. 82.3075lac
8	Compensatory Afforestation and Soil & Moisture Conservation Cost	Comp. Affn. cost Rs. 71.72 Lac Soil & Moisture Conservation cost included in Comp. Affn. cost.
Total Loss (Against the proposed forest land diversion)		Rs.384.4885 lac

Table B- Estimation of Benefit of Forest Diversion in Cost Benefit Analysis
(as per MoEF&CC Guideline dated 1st Aug 2017 related to cost benefit analysis)

SN	Parameters	Remarks (For Transmission Line)
1	Increase in Productivity attribute to the specific project	Power Flow: 2×50MVA Load Factor: 60% Power Factor: 0.8 Losses: 2.5% Average Value Added: Rs 6.00 per kwh Energy Sent Out Every Year: $2 \times 50 \times 100 \times 0.6 \times 0.8 \times 0.975 \times 365 \times 24 =$ 409968000 kwh (unit) Value Added: 409968000×6 $= \text{Rs } 2459808000 = 24598 \text{ Lac/year}$
2	Benefit to economy due to the specific project	Rs. 24598 Lac/year
3	No of population benefited due to specific project	People Jharkhand and Bihar will be benefited with proper electricity supply.
4.	Economic benefit due to direct and indirect employment due to the project	5000 No. of local employment due to this project. Socio economic condition of the persons to be employed will be increased. $5000 \text{ Man days} \times 300 = \text{Rs. } 15.00 \text{ Lac}$
5.	Economic benefits due to Compensatory Afforestation	$\text{Rs. } 2.8128 \text{ lac} \times 20.5 \text{ ha}$ (as per Guideline issued by MoEF vide letter No.F.No.5-3/2007_FC Dt.05.02.2009) = Rs.57.6624 lac
	T o t a l	Rs.24670.6624 lac

COST BENEFIT RATIO OF THE PROJECT=:

Benefit **Rs.24670.6624 lac**

Loss **Rs. 384.4885 lac**

Ratio **64 : 1**

Hence the Project has very high benefit to the country as compared to forest loss.
The benefit to loss ratio is approximate 64 times.



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