

COST BENEFIT ANALYSIS

Project: 132 KV D/C Bahragora Dhalbhumgarh Transmission Line

Forest Area proposed for Diversion – 8.763Ha

Table A: Estimation of Cost of Forest Diversion

Sl.No	Parameters	Valuation in INR
1	Ecosystem services losses due to proposed forest diversion.	Considering the Net present value of forest area to be diverted be 8.87Lakh per Ha as per highest density in Eco class III Hence losses to Eco system: $8.87\text{Lakh} \times 8.763\text{Ha} = \mathbf{77.728\text{ Lakh}}$
2	Loss of animal husbandry productivity, including loss of fodder.	Considering 10% of NPV applicable of diversion area. Hence Losses of Animal Husbandry: $8.87\text{Lakh} \times 8.763\text{Ha} \times 10\% = \mathbf{7.77\text{ Lakh}}$
3	Cost of Human resettlement.	There is No Human Resettlement involved in the project. Hence losses: NIL
4	Loss of public facility and administrative infrastructure (Roads, building, school, dispensaries, electric lines, railways, etc.) on forest land, which would require forest land if these facilities were diverted due to the project.	There is no Loss of public facility and administrative infrastructure due to this project. Hence Losses : NIL
5	Possession value of forest land diverted	Considering 30% of environmental costs (NPV) due to loss of forest. Hence losses: $8.87\text{Lakh} \times 8.763\text{Ha} \times 30\% = \mathbf{23.318\text{ Lakh}}$
6	Cost of suffering to oustees	There is No rehabilitation of people, hence no social losses. Losses : NIL
7	Habitat Fragmentation Cost	Considering 50% of applicable NPV Total Losses: $8.87\text{Lakh} \times 8.763\text{Ha} \times 50\% = \mathbf{38.864\text{ Lakh}}$
8	Compensatory afforestation and soil & Moisture conservation cost.	Considering 4 Lakh/Ha including CA and soil & Moisture Conservation cost Hence Total Losses: $4\text{ Lakh} \times 8.763\text{Ha} = \mathbf{35.052\text{ Lakh}}$

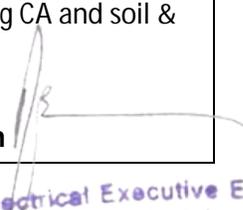

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Table B: Estimated Benefits of Forest Diversion

Sl.No	Parameters	Valuation in INR
1	Increase in Productivity attribute to the specific project	Power Flow: 2x50MVA 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 x 6 = Rs 2459808000 = 24598 Lakh/year
2	Benefit to economy due to the specific project	Same as of above.
3	No of population benefited due to specific project	Assuming average 10 unit consumption per day per household. Total around 112320 house hold can be provided electricity.
4	Economic benefits due to of direct and indirect employment due to project	The project requires an average of 200 Man force for 18 months with an average of 200 days/year $60000 \text{ Man days} \times \text{Rs } 300 =$ 180.00 Lakh
5	Economic benefits due to compensatory afforestation	Considering it to be equivalent to the NPV on the area to be diverted. Hence benefits: $8.87 \text{Lakh} \times 8.763 \text{Ha} =$ 77.728 Lakh

Total Loss to Environment : 182.73 Lakh

Benefit to Economy : 24855.73Lakh

Cost Benefit Ratio : Total Loss to Environment: Benefit to economy

= 182.73 : 24855.73

= 1: 136.02 = **1:136**


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