

## JHARKHAND URJA SANCHARAN NIGAM LIMITED (JUSNL)

### COST BENEFIT ANALYSIS

Cost Benefit analysis for 132kV D/C JAMUA - GAWAN Transmission line of Giridih districts in Jharkhand state is estimated as per the guidelines of Govt. of India, issues with letter No. 7-69/2011-FC(Pt.) dated: - 01-08-2017, and File No.5-3/2011-FC(Vol-I), Govt. of India, MoEFCC, Indira Paryavaran Bhavan, Aliganj, Jorbagh Road, New Delhi-110 003, dtd. - 6<sup>th</sup> January, 2022. given below: -

Table - A: Estimation of cost of forest diversion: -

| SL.No | Parameters   | Cost<br>(Rs. Lac) |
|-------|--|-------------------|
| 1     | Ecosystem services losses due to proposed forest diversion (Economic value of loss of eco-system services due to proposed forest diversion has been taken as the "Net present Value (NPV)" of the forest land being diverted as prescribed by the Central Government. (MoEF&CC) NPV rates taken as <u>Rs. 12.28590 Lacks. per Ha.</u> under Class III of dense forest born by the project, works out to be Rs. 668.439 Lacks. (54.407'Ha. $\times$ 12.28590) | 668.439           |
| 2     | Loss of animal husbandry productivity<br>(Taken at 10% of NPV)   | 66.844            |
| 3     | Cost of human resettlement<br>(There is no human resettlement due to proposed forest diversion)  | Nil               |
| 4     | Loss of public facilities and administrative infrastructure (Road, Building, School, Dispensaries, Electrical lines, Railways etc. on forest land, which would require forest land if these facilities were diverted due to project (No public facilities and administrative infrastructure are involve)   | Nil               |
| 5     | Possession value of forest land diverted<br>(Taken at 30% of NPV)  | 200.532           |
| 6     | Cost of suffering to ousters<br>(There are no ousters due to proposed forest diversion)  | Nil               |
| 7     | Habitat Fragmentation Cost<br>(Taken at 50% of NPV)  | 334.220           |
| 8     | Compensatory Afforestation and soil & moisture conservation cost<br>(CA arrived at Rs. 2,50,000/- per Ha. for 54.407 Ha) (Cost for double area)  | 272.035           |
| 9     | <u>Project Cost: -</u><br>Fixed assets, inclusive of investment, Current assets Loans & advances.<br>Other Expenditures like preoperative expenses, interests, interests during construction etc.  | 11941.00          |
|       | <b>TOTAL: -</b>  | <b>13483.07</b>   |

  
DGM, Trans Projects  
Transmission Circle, Deoghar

**Table – B: Estimating Benefit of forest diversion: -**

| Sl. No. | Parameters  | Cost (Rs. Lac)     |
|---------|---|--------------------|
| 1       | <p><u>Increase in productivity attributable to the specific project: -</u></p> <p>Power Flow = 140 MW (2×70)</p> <p>Load Factor = 60%</p> <p>Losses = 2.5%</p> <p>Average Value Added = Rs.6.00 per kwh</p> <p>Energy sent out per year = <math>140 \times 1000 \times 0.6 \times 8760 \times 0.975</math> kwh</p> <p>= <math>71.7444 \times 10^7</math> kwh</p> <p>Value added = <math>71.7444 \times 10^7 \times 6.00</math></p> <p>= Rs. 430.466 crore / year</p> <p>= ₹.430 crore / year</p> <p>Value added for 50 years. = <math>50 \times 430 = 21500</math> crore</p>  | 2150000.00         |
| 2       | <p>Benefit to economy due to the specific project.</p> <p>The power will be transmitted through this line to the power deficit of Jamua, Deori, Tisri &amp; Gawan block of Giridih district. This project will provide sustained and incessant supply of power to this block which will be utilized by large commercial domestic and agriculture growth leading to increased output which in turn will lead to increase in GDP (Gross domestic product) of Jharkhand.</p>   | NA                 |
| 3       | <p>No. of population benefited due to specific project.</p> <p>Assuming average 10 units consumption per day per household.</p> <p>Total <b>2.50 million households</b> can be provided electricity per year.</p>   | NA                 |
| 4       | <p>Economic benefits from Direct and Indirect Employment due to the project.</p> <p>During the project phase, the initiative is expected to generate significant employment opportunities. The project will provide direct permanent employment to <b>5</b> individuals, each receiving an annual benefit of Rs. 5.00 lakh per person. Additionally, <b>250</b> temporary employment opportunities will be created for a period of <b>18</b> months, with each temporary worker receiving an annual benefit of Rs.1.10 lakh.</p> <p>(Total temporary employment = 95625. <math>(250 \times 255[\text{working days/ year}] \times 1.5[\text{years}])</math>)</p> | 450.00             |
| 5       | <p>Economic benefits due to Compensatory Afforestation.</p> <p>(The NPV of the CA land considered as prescribed by the guidelines 7-69/2011-FC(Pt.) dated 01-08-2017)</p> <p>NPV rates taken as Class III medium density forest Rs. <b>12.2859</b> lacks/ Ha. for <b>54.407</b> Ha.</p>   | 668.439            |
|         | <b>TOTAL:-</b>  | <b>2151118.439</b> |

**Cost Benefit Ratio: -**

- i) Table - A: Estimation of Cost of forest diversion: - 13483.07 lacks
- ii) Table - B: Estimating Benefit of forest diversion: -2151118.439 lacks

Cost Benefit Ratio = 1: 2151118.439 lacks / 13483.07 lacks  
= 1: 159.542  
Say 1:160

**The Cost Benefit Ratio of the Project is estimated at 1: 160**

Signature

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Name in block letters

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RAVINDRA KUMAR RAVI

Designation

:

Dy. G.M. Trans. Operation/ Projects,.

Address

:

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