



JHARKHAND BIJLI VITRAN NIGAM LIMITED
Electric Supply Circle, Hazaribag
Julu Park, Hazaribag, Pin No. - 825301

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Phone No. 06546 - 222425

JUSTIFICATION

FOR CONSTRUCTION OF 33 KV VILL-PADMA TO VILL-NACHANWE ELECTRIC LINE AT BLOCK PADMA DISTT. HAZARIBAGH BEING CONSTRUCTED BY JBVNL FOR THE INTER CONECTING SUB-STATION.

Construction of new 33 KV in connection to power for all and to strengthen the Electrification of JBVNL, a massive planning in Electric system shall be executed by JBVNL this will improve the quality of power. In view of this 33 KV with 2X5 MVA capacity Electric Power substation is proposed in the vicinity of Padma Block, Hazaribagh District. This Electrification is planned to be located at nearby villages of the Block Padma.

Respected sir we used three alternative routes also to provide the justification there this line having less than forest area after comparing with alternative So that it is earnest request to you for allowing and help us to compilation the procedure there for we can start the construction of PSS.

Forest Area: 4.910 Ha.

JJ Area: 2.698 Ha.

Total Forest: 7.608 Ha

Clearance for same is urgently required to complete Substation.

Signature with seal:

Gopal Prasad Barnwal
Electrical Executive Engineer-Project
Electric Supply Circle
Hazaribagh

R. N. MISHRA
I.F.S.
Divisional Forest Officer
West Division, Hazaribagh



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COST BENEFIT ANALYSIS

(Ref: MoEF guideline No. 7-69/2011-FC (Pt.) dtd. 01st Aug. 2017

PROJECT: Erection of 33 KV line from Padma-PSS to Nachanve-PSS

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

NO	Nature of Proposal	Applicable/not applicable	Remarks
1	All categories of proposals involving forest land up to 20 hectares' in plains and up to 5 hectare in hills	Not applicable	
2	Proposal for defense installation purposes and oil prospection (prospection only)	Not applicable	
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction.	Not applicable	
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	There are cases where a cost benefit analysis is necessary to determine when diverting the forest land to non-forest use in the overall public interest.


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Page 1 of 6


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Table-B Estimation of cost of forest diversion.

SI No.	Parameters	Remarks	Monetary Equivalent
1	Ecosystem service losses due to proposed forest diversion	<p>Economic value of loss of ecosystem service due to diversion of forest shall be the net present value (NPV) of the forest being diverted as prescribed by the Central Government (MoEF & CC.)</p> <p>Note: In case of National parks the NPV shall be ten (10) times the normal NPV or otherwise prescribe NPV by the ministry or any other competent authority</p>	<p>Considering the Net present value of forest area to be diverted be 6.26 Lakh per Hectare as per highest density in Eco class III.</p> <p>Hence losses to Eco system in Rupees: $7.608 \text{ ha} \times 6.26 \text{ lakh} = \text{Rs.}47.63 \text{ lakh}$</p>
2	Loss of animal husbandry productivity, including loss of fodder	To be quantified and expressed in monetary terms or 10% of NPV applicable which ever is maximum	Nil as the project is an overhead Transmission line there will be no loss of animal husbandry productivity including loss of fodder.
3	Cost of human resettlement	To be quantified and expressed in monetary terms as per approved R&R plan	There is no Human Resettlement involved in the project. Hence losses : NIL
4	Loss of public facilities and administrative infrastructure (roads, building, School, dispensaries, electric lines railways, etc.) on forest land, which would require forest	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion	There is no loss of public facility and administrative infrastructure due to this project. Hence losses: NIL

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 Page 2 of 6

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	land, if these facilities were diverted due to the project		
5	Possession value of forest land diverted	30% of environmental costs (NPV) due to loss of forests 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	The possession value of forest land diverted is calculated as Rs. 14.39 Lakh (30% of NPV). However, in case of Transmission line project possession of diverted forest land is not completely required by the user Agency after completion of the project & during operation and maintenance (O & M)
6	Cost of suffering to outees	The social cost of rehabilitation of outees (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 outees should have earned in two years had he not been shifted.	There is no rehabilitation of people, hence no social losses. Losses: NIL
7	Habitant fragmentation Cost	While the relationship between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation as been pegged at 50% of NPV applicable as a thumb rule	50% of NPV 6.26 lakh X 7.608 ha X 50% = 23.81 lakh

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Page 3 of 6

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8	Compensatory afforestation and soil & moisture conservations cost	The actual cost of compensatory afforestation and soil moisture conservation and its maintenance in future at present discounted value	Cost of CA considered as 4 lakhs per hectare including soil & Moisture conservation work. Total CA cost = 4 Lakh X 7.608 Ha. = 30.43 Lakh $47.63 + 14.39 + 23.81 + 30.43 = 116.16$ lakh
	Total		

Table-C -Existing guidelines for estimating of forest-diversion in CBA.

SI No.	Parameters	Remarks	Monetary Equivalent
1	Increase productivity attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting	Uninterrupted supply of electricity can make a big difference in society, it boosts socio economy growth, irrigation, telecommunication facilities, health education and overall economy of state. The lump sum monetary equivalent of above benefits considered as 100 lakhs.
2	Benefits to economy due to the specific project	The incremental economic benefit in the monetary terms due to the activities attributed to the specific project.	The monetary returns of the specific transmission project is calculated as below: Power Flow: 6500 KW

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Page 4 of 6

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		Average value added: Rs.6.00 per kwh Energy sent out per year: 6500 X 24 X 365 = 56940000 kwh Value added: 56940000 kwh X 6 = 3416.4 lakh/year
3	No. of population benefited due to specific project	As per the detailed Project Report Population of whole area and its surrounding will get benefit by this project. This will help to provide stable power supply of govt. offices like Block, Thana, Primary health centre, school and other govt. buildings and household of different villages. It helps greatly to improve socio economy development of the area. The lump sum Monetary equivalent of the benefit is considered as: Rs.50.00 lakhs
4	Economic benefits due to of direct and indirect employment due to the project	As per the detailed Project Report A. Minimum 50 temporary labour engaged during the construction of transmission line approx 100 days @300/- per mandays. =50 X 100 X 300 = 15 Lakh B. Permanent Employee - 04 for entire period. Therefore 04 X 40000 X 12 X 25 year=Rs.480 Lakh
5	Economic benefits due to compensatory afforestation	Benefits from such compensatory afforestation accruing over next 50 years monetised and discounted to the present value should be huge and monetary equivalent

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Page 5 of 6

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	<p>included as benefit of is considered as Rs.100 lakh compensatory afforestation. *For benefits of CA the guideline of the Ministry for NPV estimation may be consulted.</p>	
TOTAL		$100+3416.4+50+15+480+100=4161.4$ lakh

Total Environment loss: **116.16 lakh**

Total Benefit to society: **4161.4 lakh**

(Value for 25 years = Rs.86155 lakh)

Cost benefit Ratio (CBA Ratio): **Benefit/Cost, 86155/116.16**

CBA RATIO: **741.69:1**


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