

**ANNEXURE-3****COST BENEFIT ANALYSIS**

**Full Title of the Project:** Diversion of 338.74 Ha Forest land for Non-forest purpose w.r.t. Barjora (North) Coal Mine of The West Bengal Power Development Corporation Limited.

**Proposal No. :** FP/WB/MIN/43000/2019

**Date of Proposal:** 04/12/2019

**Forest Land Proposed for Diversion:** 338.74 Hectare

CATEGORY OF PROPOSAL FOR WHICH COST- BENEFIT ANALYSIS IS APPLICABLE			
Sr.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 hectares in hills	NOT APPLICABLE	Nil
2	Proposal for defense installation purpose and soil prospecting (prospecting only)	NOT APPLICABLE	Nil
3	Habitation, establishment of industrial unit, tourist lodges/ complex and other building construction	NOT APPLICABLE	Nil
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, hydel projects, mining activity, railway lines, location specific installation like micro-wave stations, auto-repeater centres, TV towers etc.	APPLICABLE	Cost Benefit Analysis is applicable for the Project as Forest land Proposed for Diversion is more than 20 ha.

  
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TABLE- B :- ESTIMATION OF COST OF FOREST DIVERSION			
S. NO.	PARAMETERS	Given Guideline	Evaluation
1	Ecosystem services losses due to proposed forest diversion	Economic Value of loss of economic services due to diversion of forests shall be the net present value (NPV) of the forest land being diverted as prescribed by Central Govt. (MoEF& CC)	Net Present Value/hectare= Rs.12.28590 Lacs per Hectare So, NPV for 338.74 Hectare Forest Land will be Forest Area× NPV/hectare= <b>Rs 4161.7258 lacs</b>
2	Loss of animal husbandry productivity including loss of fodder	To be quantified and expressed in monetary terms 10 % of NPV applicable, whichever is maximum	Considering 10 % of NPV as per the guideline = <b>Rs 416.1726 lac</b>
3	Cost of human resettlement	To be quantified and expressed in monetary terms on actual terms as per approved R&R plan	NIL Since there is no displacement of peoples due to proposed project.
4	Loss of public facilities and administrative infrastructure (Road, Building, Schools, Dispensaries electric lines, Railway etc.) on forest land if these facilities were diverted due to project.	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion.	NIL Since No public facilities and/ or administrative infrastructure i.e. roads, building, schools, dispensaries, electric lines, railways etc. are not available inside the Forest land proposed for diversion, hence there is no loss of facilities due to diversion of forest land.
5	Possession value of forest land diverted	30 % of environment cost (NPV) due to loss of forest or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land whichever is less	Possession value of land will be (considering 30 % of NPV) = <b>Rs. 1248.5177 lac</b>
6	cost of suffering to oustees	The social cost of rehabilitation of outsees (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 outsees should have earned in two years had he not been shifted	NOT APPLICABLE

  
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7	Habitat Fragmentation Cost	while the relationship between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV application as a thumb rule.	Habitat Fragmentation Cost is 50 % of NPV = <b>Rs. 2080.8629 lac</b>
8	compensatory afforestation and soil & moisture conservation cost	The actual cost of CA and soil & moisture conservation and its maintenance in future at present discount value	<b>Rs. 3005.8856 lac</b> (CA cost is = Rs. 2227.5434 lac & SMC Cost = Rs. 778.3422 lac)
9	Cost of the project	As per guidelines	Cost of the project is Rs. <b>91858.00 Lacs</b>
<b>Total Cost</b>			<b>102771.165 Lacs</b>

<b>TABLE - C :-Existing guidelines for estimating benefits of forest - diversion in CBA</b>			
<b>S. NO.</b>	<b>PARAMETERS</b>	<b>Given Guideline</b>	<b>Evaluation</b>
1	Increase in productivity attributable to the specific Project	To be quantified & expressed in monetary terms avoiding double counting	Net benefit accrued to the economy due to the Proposed Activities in the Forest land proposed for diversion over 15 years shall be : Coal worth in Project Area – 60.24 MT x Rs.1300(per tonne Coal value) = <b>Rs 783120 Lacs</b>
2	Benefits of economy due to the specific project	The incremental economic benefit in monetary terms due to the activities attributed to the specified project	
3	Number of populations benefited due to specific project	As per detailed project report	Approx 54 million tonne coal will be produced from Forest area, which will produce 160000 MU of electricity and it will be utilized in the state including local populations.
4	Employment benefits due to of direct and indirect employment due to the project	As per detailed project report	500 employment will be generated: employment for 500 Persons @ Rs. 3,00000/- (average annual income) for a period of 15 years = Rs. 15 X 300000 X 500 = <b>Rs. 22500 Lacs</b>
5	Economic benefits due to compensatory afforestation	Benefit from such compensatory forestation accruing over next 50 year monetized and discounted to the present value should be included as benefits of CA	Wildlife Conservation Plan Costing = <b>Rs. 8431 Lacs</b>

  
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Cost			Benefit		
S.N	Parameter	Amount (in Lacs)	Sr.No.	Parameter	Amount (in Lacs)
1	Ecosystem services losses due to proposed forest diversion	4161.7258	1	Benefits to economy	783120
2	Loss of animal husbandary productivity including loss of fodder	416.1726	2	Economic benefit due to employment	22500
3	possession value of forest land diverted	1248.5177	3	Wildlife Conservation	8431
4	Habitat Fragmentation Cost	2080.8629			
5	compensatory afforestation and soil & moisture conservation cost	3005.8856			
6	Cost of the project	91858			
	Total Cost	102771.165		Total Benefit	814051

**Cost Benefit Ratio:** Total Benefit/Total Cost = 814051/ 102771.165 = 7.921

**The Benefit Cost ratio is > 1, the project is found viable on given/above described criteria**

  
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Place: Kolkata  
 Date: 08/02/2024

Seal & Signature of User Agency