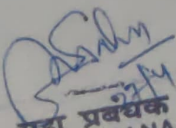


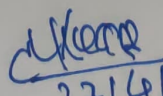
Cost Benefit Analysis of Tilaboni UG - Diversion of 38.38 Ha as per MOEF&CC

Circular Dated 01-08-2017

Table B: Estimation of cost of forest diversion

Sl No	Parameters	Remarks	Value in INR
1.	Ecosystem services loss due to proposed forest diversion	<p>Economic value of loss of ecosystem service should be the net present value of the forest being diverted as prescribed by the MoEF&CC.</p> <p>Note: in case of National parks the NPV shall be 10 times the normal NPV and incase of Wildlife sanctuaries the NPV shall be five times the normal NPV as prescribed by the Ministry or any other competent authority</p>	<p>i) Since the forest is typically Tropical dry deciduous Forest it falls under the category-Eco Class III</p> <p>ii) Average forest Density is 0.7 and is thus classified as dense forest</p> <p>iii) As such Rate of NPV per Ha = ₹ 13,57,110.00</p> <p>Thus, NPV for 38.38 Ha of forest land = $13,57,110.00 \times 38.38 = \text{₹ } 5,20,85,881.80$.</p> <p><u>Ref: Guidelines for Calculation of NPV vide MoEF&CC, Gol, Fno. 5-3/2011-FC (Vol-I) dated 06.01.2022</u></p>
2.	Loss of animal husbandry or fodder	To be quantified and expressed in Monetary terms or 10% NPV whichever is maximum	<p>There is no significant animal husbandry or fodder in the area.</p> <p>As such the maximum value can be quantified as 10% NPV (10% of ₹ 5,20,85,881.80) = ₹ 52,08,588.18</p> <p>(Refer Sl no.1 for value of NPV)</p>
3.	Cost of human Settlement	To be quantified and expressed in Monetary terms as per approved R&R Plan	Total Cost of Human settlement is ₹ 10,01,00,000.00 as per R&R plan. Actual cost may be calculated at the time of execution and as per requirement from your end.
4.	Loss of public facilities and administrative infrastructure (Roads, buildings, schools, dispensaries, electric lines, railways) on Forest land which would require forest land if these facilities were	To be quantified and expressed in Monetary terms on actual cost basis at the time of diversion	There will be no loss of public facilities and administrative infrastructure (Roads, buildings, schools, dispensaries, electric lines, railways) on Forest land which would require forest land if these facilities. As such the Monetary Value on actual cost basis at the time of diversion is <u>NIL</u> .


GENERAL MANAGER
 Eastern Coalfields Ltd.
 Bankola Area
 Dist. Paschim Bardhaman


 27/4/2023

महाप्रबंधक/General Manager
 पर्यावरण विभाग / ईसीएल मुख्यालय
 Environment Deptt./ECL HQ.

Parameters	Remarks	Value in INR
diverted due to the project.		
5 Possession value of the forest land	30% of the environmental costs (NPV) due to NPV or loss of forest or circle rate of adjoining areas of the district should be added as cost component of possession value of the forest land; whichever is maximum.	<p>i) 30% of NPV = 30 % of ₹ 5,20,85,881.80 = ₹ 1,56,25,764.54 (Refer SI no.1 for value of NPV)</p> <p>ii) Circle Rate of Govt. land as per approved PR = Rs. 2,22,30,000/Ha.</p> <p>Thus, the rate of 38.38 Ha forest land = Rs. 2,22,30,000/Ha. x 38.38 ha = ₹. 85,31,87,400.</p> <p>Maximum of (i) and (ii) is ₹ 85,31,87,400.</p> <p>Reference Annexure – I.</p> <p>Majhi Bustee, which is to be rehabilitated for the project, is situated at a distance of 600 m from the forest and may be depending on the forest for firewood, leaves, etc. Assuming the entire population is dependent on the forest for these purposes, the cost of suffering can be calculated as under:</p> <p>1. Cost of firewood The maximum cost of firewood as declared by the West Bengal Govt. is ₹ 900.00 per m³ (Source: http://www.westbengalforest.gov.in/notice/n08-02-2021-01.pdf). Taking the specific gravity of dry wood to be 0.6, weight of 1 m³ of dry firewood would be 600 kg. Thus, cost of dry firewood works out to ₹ 900.00 / 600 kg = ₹ 1.50 per kg. Taking consumption of 20 kg per household per day, the total cost of firewood for 164 households works out to 20 kg x 164 HH x 730 days x ₹ 1.5 per kg = ₹ 35,91,600.00</p> <p>2. Cost of Mahua Mahua trees constitute 90% of the forest i.e. 90% of 38.38 Ha = 34.542 Ha. Taking a tree count of 1000 trees/ha for 0.7 canopy density,</p> <p>a) <u>Cost of Mahua Flowers</u> Annual Yield of Mahua Flowers = 80-320 kg/tree (Source: www.foodandnutritionjournal.org) Taking the yield to be average as 200 kg/tree, total yield of Mahua from the forest land for 2 years = 200 kg x 1000 trees/ha x 34.542 Ha x 2 years = 1,38,16,800.00 kg Cost of Mahua Flowers per kg as per Schedule of Rates of Govt. of WB = ₹ 13.20 (Source: http://www.westbengalforest.gov.in/notice/n08-02-2021-01.pdf) Cost of Mahua Flowers per kg as per MSP of non-forest produce by Govt. of India = ₹ 17.00 (Source: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1557528)</p>
6. Cost suffering oustees of to	The social cost of rehabilitation of the oustees (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 oustees should have earned in two years had he not been shifted.	

Sub. no. 14

महा प्रबंधक
GENERAL MANAGER
Eastern Coalfields Ltd.
Bankola Area
Dist. Paschim Bardhaman

27.4.2023

महाप्रबंधक/ General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Dept./ECL HQ.

Parameters	Remarks	Value in INR
		<p>Taking the highest value of the two i.e., ₹ 17.00 per kg, the total cost of Mahua Flowers = ₹ 17.00 x 1,38,16,800 = ₹ 23,48,85,600.00</p> <p>b) <u>Mahua Seeds</u> Annual Yield of Mahua Seeds = 20-40 kg/tree (Source: www.ijddr.in). Taking the yield to be average as 30 kg/tree, total yield of Mahua Seeds from the forest land for 2 years = 30.00 kg x 1000 trees/Ha x 34.542 Ha x 2 = 20,72,520 kg. Cost of Mahua Seeds per kg as per MSP of non-forest produce by Govt. of India = ₹ 25.00 (Source: https://pib.gov.in/Pressreleaseshare.aspx?PRID=15575 28) Thus, the total cost of Mahua Seeds = ₹ 25.00 x 20,72,520 = ₹ 5,18,13,000.00 Total cost of Mahua = A+B = ₹ 28,66,98,600.00</p> <p>3. <u>Cost of Sal seeds</u> Sal trees constitute 10% of the forest i.e. 10% of 38.38 Ha = 3.838 Ha. Seed production from 3.838 Ha sal plantation @ 500 kg / Ha would be 1919 kg / year. Cost of sal seed produce = 1919 kg x ₹ 22.00 per kg (Source: http://www.westbengalforest.gov.in/notice/n08-02-2021-01.pdf) = ₹ 42218.00 per year. Produce over 2 years = ₹ 84436.00 Total cost of social rehabilitation = 1.5 x (1+2+3) = ₹ 43,55,61,954.00</p>
7.	Habitat Fragmentation Cost	<p>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 applicable as thumb rule</p> <p>Habitat Fragmentation Cost = 50% of NPV = ₹ 2,60,42,940.90</p>
8	Compensatory afforestation and soil and moisture conservation cost	<p>The actual cost of Compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted rate</p> <p>The project is an underground project. However, an estimate for Compensatory Afforestation over 76.80 Ha double degraded land including 10 years maintenance has been prepared by DFO, Durgapur for an amount of = ₹ 4,72,22,476.00</p>

Subin

27/4
महा प्रबंधक
GENERAL MANAGER
Eastern Coalfields Ltd.
Bankola Area
P.O.-Ukhra, Dist.-Paschim Bardhaman

27.4.2023

महाप्रबंधक/General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Dept./ECL. HQ.

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

Sl. No.	Parameters	Remarks	Value in INR
1	Increase in productivity attributed to specific project	To be quantified and expressed in Monetary term	The increase in productivity will be the increase in electricity generated from coal extracted from Tilaboni UG which amounts to ₹ 30,85,088.6789165 lacs. For calculations, refer Annexure – II.
2	Benefits to the economy due to specific project	The incremental economic benefit in monetary term due to the activities attributed to the specific project	₹ 94185.3 lacs which is the cost of the project that is infused directly into the economy to provide benefits by virtue of coal production and consequent generation of power, adding to energy security of the nation.
3	No. of population benefited due to specific project	As per Detailed project report	The no. of population benefited due to employment in the project year-wise is tabulated in Annexure – III. However, 880 employment will also be generated as per CIL R&R Policy where there is provision of 1 employment/2 acres of land.
4	Economic benefits due to direct and indirect employment due to the project	As per the Detailed project report	The economic benefits due to the generation of employment in the project in terms of wages are tabulated in Annexure – IV.
5	Economic benefit due to Compensatory afforestation	Benefits from such compensatory afforestation acquiring over next 50 years and discounted to present value should be included as benefits of compensatory afforestation. * For benefits of CA guideline of the Ministry for NPV estimation may be consulted	Considering the Guidelines for Calculation of NPV vide MoEF&CC, GoI, Fno. 5-3/2011-FC (Vol-I) dated 06.01.2022 and considering the fact the CA will result in Eco-class III forest the minimum economic benefit acquiring out of Compensatory afforestation is NPV. We may consider minimum value of Eco class III forest land (density 0.7) is ₹ 1,041.7176360 lacs

Estimated Cost = ₹ 1,51,94,09,240.88 = ₹ 15,194.0924088 lacs

Estimated Benefit = ₹ 31,80,315.6965525 lacs

Cost to Benefit Ratio = 0.0048

Sub. in. Ld.

[Signature]
27/4

**महा प्रबंधक
GENERAL MANAGER
Eastern Coalfields Ltd.
Bankola Area
P.O.-Ukhra, Dist.-Paschim Bardhaman**

[Signature]
27-4-2023

**महाप्रबंधक/General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Deptt./ECL HQ.**

Government of West Bengal
Department of Land and Land Reforms and Refugee, Relief and Rehabilitation
LR(A-III) Branch, Nabanna, Howrah

No. 1827 - GE(M)/2L-120/18

Dated: 23.05.2018

From: The OSD & E.O. Assistant Secretary to the Govt. of West Bengal.
 To: The District Magistrate & Collector, Paschim Bardhaman, Vivekananda Sarani,
 P.O. R.K.Mission, Kanyapur, Asansol - 05.

Subject: Transfer of 1.13 acres of Govt. vested land at Mouza - Sarpi, J. L. No. 036 under P.S. Faridpur in the District - Paschim Bardhaman in favour of ECL, Bankola Area, Ministry of Coal, Govt. of India for coal mining.

The undersigned is directed to refer to his Memo. No. 399/DLLRO-PAB/LM/18 dated 13.03.2018 on the above-noted subject and to state that the Governor is hereby pleased to accord sanction to the transfer of 1.13 acres of Govt. land, as detailed in the land schedule below, to the Ministry of Coal, Govt. of India with effect from the date of delivery of possession of the said land on a transfer value of Rs.73,74,311/- (Rupees seventy-three lakh seventy-four thousand three hundred eleven) only for coal mining.

Land Schedule

District - Paschim Bardhaman, P.S. Faridpur, Mouza - Sarpi, JL No. 036

Sl. No.	Plot No.	Area (acre)
1	869	0.89
2	908	0.05
3	1046	0.19

Total = 1.13 acres

2. The amount to be realized from the Govt. of India is to be credited to the head, "0029-Land Revenue- 00-101- Land Revenue/Tax-002 - Collection from Estate leased to farmers- 30-Lease Rent/Salami" in the budget of the current financial year. [0029-00-101-002-30].

3. If it is subsequently detected that the land in question is involved in a court case in any Hon'ble court of Law, then all concerned shall abide by the order as may be passed by that Hon'ble Court.

4. A deed of transfer as per draft "Indenture" enclosed herewith have to be executed by the District Land and Land reforms Officer, Paschim Bardhaman for and on behalf of the Governor of West Bengal and the authorized representative of the President of India along with two witnesses.

5. It is, accordingly, requested that on payment of Rs.73,74,311/- (Rupees seventy-three lakh seventy-four thousand three hundred eleven) only as transfer value, by the Government of India, the possession of the land may be handed over to the authorised representative of the Ministry of Coal, Govt. of India and thereafter, the draft deed of transfer as per "Indenture" enclosed may be engrossed on durable papers in quadruplicate, signed by the District Land & Land Reforms Officer, Paschim Bardhaman under his office seal and sent to the Government in the Land & Land Reforms and Refugee, Relief & Rehabilitation Department alongwith two witnesses for acceptance and further action. The amount payable by the Ministry of Coal, Govt. of India, is to be realized from them within 45(forty five) days from the date of this order.

6. The space of the first page of the documents for the purpose of inserting date may be left blank and no date should be given while signing the documents.

Sd/-

OSD and E.O. Assistant Secretary to the Govt. of West Bengal

No. 1827/1(5) - GE(M)/2L-120/18

Dated: 23.05.2018

Copy forwarded for information and necessary action to the:

1. Secretary to the Ministry of Coal, Govt. of India, New Delhi.
2. Director of Land Records and Survey, West Bengal,
35, Gopalnagar Road, Alipore, Kolkata-700 027.
3. A.D.M. & D.L. & L.R.O., Paschim Bardhaman, P.O. Rajbati, Dist. Burdwan.
- ✓ 4. General Manager, Eastern Coalfield Limited, Bankola Area, P.O. Ukhra, Dist. Burdwan,
PIN - 713 363.
5. Guard file.

OSD & E.O. Assistant Secretary to the Govt. of West Bengal.

महाप्रबंधक/ General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Deptt./ECL. HQ.

Table for calculation of increase in productivity

Source:

- महाप्रबंधक/ General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Deptt./ECL. HQ.

22/07/19
AMP CD
Bannock Area

Scanned by CamScanner

Annexure-III

Year	1-3	4	5	6	7-17	18	19-20	21-25
Manpower	904	734	742	742	799	799	787	787

Source: Project Report of Tilaboni UGP

25/9/19

महाप्रबंधक/ General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Deptt./ECL. HQ.

Signature of

21/8/19
22/07/19
A.M.P.E.D.

Banwala Area

Scanned by CamScanner

Annexure-IV

Year	1-3	4	5	6	7-17	18	19-20	21-25
Manpower	904	734	742	742	799	799	787	787
Wages(in lac)	7134.00	6163.90	6224.92	6224.92	6716.36	6716.36	6609.27	6609.27

Environment Deptt./ECL. HQ.
जलवायु विभाग / ईसीएल मुख्यालय
General Manager

25/9/15
महाप्रबंधक/ General Manager
पर्यावरण विभाग / ईसीएल मुख्यालय
Environment Deptt./ECL. HQ.

22/6/19
Signature of AMP
Barkola Area