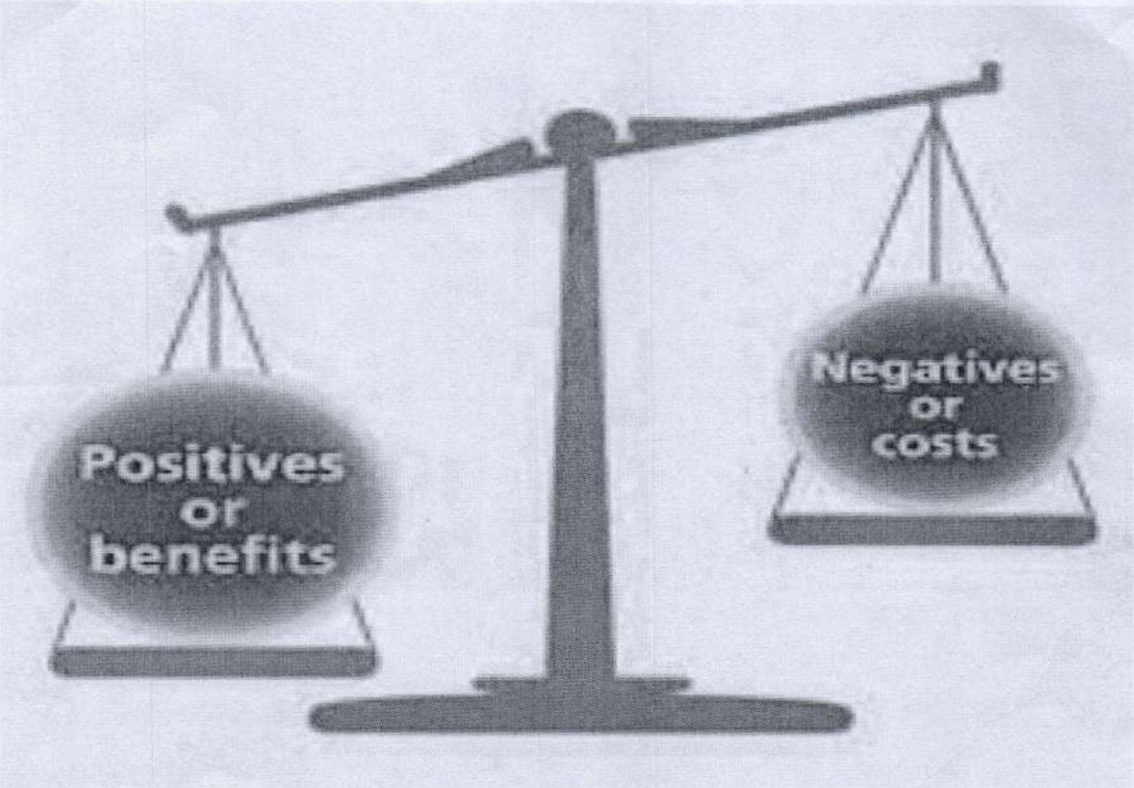

COST BENEFIT ANALYSIS REPORT

[As pe MoEFCC Guideline 7-69/2011-FC(Pt.) dtd. 01 August, 2017]

Parej East Open Cast Project(101.00 Ha)
Hazaribagh Area

Central Coalfields Limited
(A Miniratna Company)
Govt. of India Undertaking

Project officer
Parej East O/C Project
Hazaribag Area

Introduction:

Parej East OCP is an existing mine which occupies the southern sector of Parej East Block & is located in West Bokaro Coalfields of Jharkhand state. It is a part of Hazaribagh Area of Central Coalfields Limited. Parej East OCP is approachable by a 12 km metalled mines board road connecting at Charhi on National Highway No 33. The Project is located at distance of 90 kms from Ranchi and 30 Kms from Hazaribagh town. The project is targeted for a production of 1.75 MTY of coal with a project life of 20 years as per RPR 2001.

Communication:

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The nature of forest land for which application for diversion of forest land to be applied at Parej East OCP (101.00 Ha) falls in Class III MDF forest. As such Rate of NPV comes out as Rs 8,03,000 per ha for 101.00 Ha of the proposed forest land for diversion.

Table 1: Calculation rate for NPV in respect of Parej East OCP (101 Ha)

Description	**Amount in Rs.**	**Amount in Rs. Lakhs**
Total NPV @Rs.803000/Ha	81103000	811.03
10% NPV Value	811030	81.103
30% NPV Value	24330900	243.309
50% NPV Value	40551500	405.515

2.0 Purpose for Cost benefit analysis:

Cost benefit report is required for making online application in Part-1,G. The report has been prepared on the basis of MoEFCC circular no. 7-69/2011-FC(Pt.) dated. 01 August, 2017. (copy Attached as Annexure A).

Table 2 : Breakup of Land

Area	Name of Project	Area as per Mine Plan (in Ha)	Total Area as per forest application (in Ha)	Forest Land as per Application (in Ha)	Notified Forest as per Application (in Ha)	GMK JJ/Revenue Forest as per Application (in Ha)	Non Forest Land as per Application
Hazaribagh Area	Parej East OCP (101.00 Ha)	399	101	101	2.71	98.29	0

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CALCULATION AS PER MOEFCC CIRCULAR NO. 7-69/2011-FC(PT.) Dated. 01 AUGUST, 2017.

I. Estimation of cost of forest diversion

1. Ecosystem services losses due to proposed forest diversion

Economic value of loss of ecosystem services due to diversion of forest = Net present value (NPV) of the forest land being diverted as per prescribed by the Central Government (MoEF&CC).

As the Forest land proposed does not fall in National park & Wild life sanctuary

Ecosystem services losses due to proposed forest diversion for 101.00 ha = **Rs. 811.03 Lakh** (Ref Table 5)

2. Loss of animal husbandry productivity, including loss of fodder

No. of PAFs = 1050
Assuming no. Of animal husbandry as 4
Factor = 60
Loss of animal husbandry productivity, including loss of fodder = 1050*4*365*60
= **Rs. 919.8 Lakh**

10% of NPV = **Rs. 81.103 lakh** (ref Table 5)

Since Loss of animal husbandry productivityis more, thus as per guideline:
Loss of animal husbandry productivity, including loss of fodder = **Rs 919.8 lakh**

3. Cost of human resettlement as per R&R Plan =Rs 3167.85 Lakh

(Refer Table-7

As per MoEFCCduidelines the cost of human settlement is to be quantified and expressed in monetary terms. For expressing the cost of human settlement the R&R policy of Coal India has been taken into consideration. The different components that has been considered are as follows :

(As per R&R Policy)

Monetary Compensation to PAFs - Monetary compensation @ Rs.5.0 Lakh per acre subject to a minimum of Rs.0.50 Lakh. The compensation can be paid in form of annuity also on monthly, quarterly, annually etc upto 60 years of age or life of project, whichever is earlier.

Note : A person receiving employment forgoes all claims to monetary compensation and a person receiving monetary compensation forgoes all claims to employment.

Compensation to homestead for Alternate housing - Compensation for homestead building as per standard valuation method under LA Act. Payment of Rs 3.0 Lakh in lieu of alternate housing site, assistance in designing & shifting, compensation for construction of cattle shed and working shed etc.

Compensation to Homestead as Subsistance Allowance - Subsistence allowance to each affected family @ 25 days Minimum Agricultural Wages per month for one year.

Compensation to landless Tribal familly - Affected landless tribal families will be provided one time financial assistance equivalent to 500 days MAWs as a compensation for loss of customary rights.

4. Loss of public facilities and administrative infrastructure(Roads, buildings, schools, dispensaries, electric line, railways, etc.) on forest land, which would require forest land if these facilities were diverted due to the project = **Rs.86 Lakh**

5. Possession value of forest land diverted

Amount as per Circle rate of adjoining area= **Rs 3017.17 Lakh** (Ref Table 6)
30% NPV = **Rs. 243.309 Lakhs** (Ref Table 5)
Since circle rate of adjoining area is more than NPV paid therefore as per guideline,
Possession value of forest land diverted= **Rs 3017.17 Lakh**

6. Cost of suffering of oustees = Rs 22831.2 Lakhs

No. Of Outsees = No. of PAFs = 1050

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7. **Habitat Fragmentation cost**

Cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule (Ref Circular MoEF)

50 % of NPV = **Rs. 405.515 Lakhs** (Ref table 5)

8. **Compensatory afforestation and soil & moisture conservation cost**

Cost of Compensatory Afforestation and soil & moisture conservation = **Rs. 359.22 Lakhs**

II. Estimating benefits of forest – diversion in CBA

1. Increase in productively attribute due to the project = Rs. 485937.978 Lakhs
2. Benefits to economy due to specific project= Rs 205644.21 Lakhs
3. No. of population benefitted due to specific project= 29400
4. Economic benefits due to direct and indirect employment due to project:

   Economic benefits due to direct employment due to project in Rs. Lakhs= 7320.53

   Economic benefits due to indirect employment due to project in Rs. Lakhs= 2342.20

   Total Economic benefits due to direct and indirect employment due to project in Rs. Lakhs =9662.73

5. **Economic benefits due to compensatory afforestation:**

Economic benefits due to Compensatory afforestation only in Rs. Lakhs	Economic benefits due to Carbon Storage due to CA in Rs. Lakhs
286.03	281.70

Total Economic benefits due to compensatory afforestation= **Rs 567.73 Lakhs**

Total Estimated Cost of Forest Diversion

Table: Estimation of cost of forest diversion (as per table B of guidelines)

Sl No	Parameter	Result (in Lakh)
1	Ecosystem services losses due to proposed forest diversion	811.03
2	Loss of animal husbandry productivity, including loss of fodder	919.8
3	Cost of human resettlement	3167.85
4	Loss of public facilities and administrative infrastructure (Roads, buildings, schools, dispensaries, electric line, railways, etc.) On forest land, which would require forest land if these facilities were diverted due to the project	86
5	Possession value of forest land diverted	3017.17
6	Cost of suffering of oustees	22831.20
7	Habitat Fragmentation cost	405.515
8	Compensatory afforestation and soil & moisture conservation cost	359.22
	Total Loss in Lakh Rs	31597.785

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Total Estimated Benifit of Forest Diversion

Table: Existing guidelines for estimating benefits of forest – diversion in CBA (As per Table C of Guidelines)		
Sl No	Parameters	Result(in Lakh)
1	Increase in productively attribute to the specific project	485937.98
2	Benefits to economy due to specific project	205644.21
3	No of population benefitted due to specific project	29400
4	Economic benefits due to direct and indirect employment due to project	9662.73
5	Economic benefits due to compensatory afforestation	567.73
	Total Benefit in Rs Lakh (2+4+5)	215874.67

Cost to benefit ratio = 215874.67**/31597.785= 1 : 6.83**

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3.0 Details of Project Affected Family (PAF):

Table 3 : Detail of Household shifting

No. of villages to be rehabilitated	Name of village to be Rehabilitated	No. of Project affected person	No. of PAF to be shifted at R&R site	No. of tribal amongst PAF	No. of Tribal PAF to be shifted within District
3	Duru Kashmar, Fakodih, Agariya	1050	690	890	890

4.0 The details of nature of forest land for which application for diversion of forest land applied are as under:

Table 4: Rates of Net Present Value, Compensatory Afforestation, Carbon Storage, Soil Conservation, Moisture Conservation applicable to forest application

Area	Name of Project	Economy Class of Forest	Type of Forest	Rate of NPV in Rs/Ha	rate of CA in Rs/ha	Rate of Soil conservation in Rs/Ha/Yr	Rate of Moisture conservation in Rs/Ha/Yr	Rate of gain in Forest Cover due to CA in Rs/Ha	Rate of increase in Carbon Storage Cap due to CA in Rs/Ha
Hazaribagh Area	Parej East OCP (101.00 Ha)	III	MDF	803000	176009	4101	527	177000	174319

Table 5: Amount in Rs. Lakhs as per Table-4 above for the forest application

Area	Name of Project	Amount of NPV (in Lakhs)	10 % NPV Amount (in Lakhs)	30 % NPV Amount(in Lakhs)	50% NPV Amount (in Lakhs)	Loss due to CA (in Lakhs)	Loss due to Soil & Moisture Conservation (in Lakhs)	Benefits due increase in Forest cover due to CA (in Lakhs)	Benefits of Carbon Storage due to CA (in Lakhs)
Hazaribagh Area	Parej East OCP (101.00 Ha)	811.03	81.103	243.309	405.515	284.430544	74.78848	286.032	281.699504

Table 6: Cost of Land as per Prevailing Circle Rate

Name of Village	Type of Land in Vicinity	Cost of Land as per Circle Rate in Rs. Lakhs
Parej, Duru kashmar, Barughutu	Agricultural, Residential	3017.17

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Table 7: Cost of human resettlement in Rs Lakhs (As per R&R Policy)

Monetary Compensation to PAFs	Compensation to homestead for Alternate housing	Compensation to Homestead as Subsistence Allowance	Compensation to landless Tribal family	Cost of human settlement
0	1080	752.85	1335	3167.85

5.0 Taxes levied and collected by Government

These taxes collected are used for the people and is thus directly related to benefits to economy / society.

Table 8: Taxes collected by Government in Rs. Lakhs

CSR - 2% of Retained Profit	Royalty 15 of sales value	District Mining Fund	National Mineral Fund	Taxes levied as Coal Cess	GST collected for Expenditures (Capital/Revenue)	Stowing Cess	Other taxes if any
7775.01	68626.88	20588.06	1372.54	106688	593.72	0	0
Benefits due CSR activities as per Company's Act 2012. Royalty Reference : (1)Extraordinary gazette , part II – Sec 3(i), MoC Notification New Delhi , the 10th May 2012 (II) Extraordinary gazette , part II – Sec 3(i), MoC Notification New Delhi , the 31st Aug 2016							

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