

COST-BENEFIT ANALYSIS OF GONDULPARA COAL MINE

Project: Diversion of 219.80 Ha. of Forest land for Gondulpura Coal mines in the villages of Gondulpura, Gali, Balodar, Phulang & Hahe of District Hazaribagh, Jharkhand under the "Adani Enterprises Limited".

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

S. NO.	Nature of proposal	Applicable / Not Applicable	Remarks
1	All categories of proposals involving forest land up to 20 hectares in plain and up to 5 hectares in hills	Not applicable	These proposals may be considered on case to case basic and value judgment.
2	Proposal for defense installation purposes and oil prospecting (prospecting only)	Not applicable	In view of national priority accorded to this sector, the proposals would be critically assessed to help ascertain that the utmost minimum forestland is diverted for non - forest use.
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction.	Not applicable	These activities being detrimental to protection and conservation of forest, as a matter of policy, such proposals would be rarely entertained.
4	All other proposals involving forestland 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 installation like microwave stations, auto repeater Centre TV tower etc.	Applicable	The proposed project is for diversion of 219.80 hectares of forest land for Gondulpura Coal mines in the villages of Gondulpura, Gali, Balodar, Phulang & Hahe of District Hazaribagh, Jharkhand.


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Table-B: Estimation of cost of forest diversion

S.N.	Parameters	Cost in crores Rs.	Remarks
1	Ecosystem services losses due to proposed forest diversion.	27.004	Economic value of loss of eco-system services due to diversion of forests shall be the net present value (NPV) of the forest land being diverted (219.80 Ha) as prescribed by the Central Government, (MoEF & CC).
2	Loss of Animal Husbandry	2.700	<p>1. As per the calculation, Loss of animal husbandry productivity including loss of fodder is Rs.26.673 lakhs.</p> <p>(a) Estimated Quantity of fodder / grasses = Average production fodder / grasses in M.T. x Area Applied (based on the assumption that on closer an area is capable of yielding an average 2 to 4 MT of grass per ha. (MT): 3mt. x 219.80 = 659.40 mt.</p> <p>(b) Value of fodder = Estimated quantity x market rate = 659.40 MT x Rs.4500/Ha= Rs.29.673 lakhs)</p> <p>2. Considered 10% NPV which is maximum: Rs 27.004 crore x 0.1 (10%)= Rs.2.700 crore</p>
3	Cost of Human Resettlement	0	Though there are no human resettlement in Forest land, Cost of human resettlement



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			(R&R) in Tenancy land is included in Project cost estimates
4	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways etc) on forest land, which would require forest land if these facilities were diverted due to the project.	0	Though there are no loss of public facilities & administrative infrastructure on forest land but Cost of public facilities & administrative infrastructure in Government land in outside the forest area is included in Project cost estimates
5	Possession value of forest land diverted.	21.062	<p>1. Circle rate of adjoining area in the district as a cost component as possession value of forest land is arrived as Rs 21.062 crore</p> <p>2. 30% of environmental costs (NPV) due to loss of forests ($27.004 \times 0.30 = \text{Rs } 8.101$ crore)</p> <p>3. Circle rate of adjoining area is Rs.21.062 crore which is maximum compared to 30% of NPV. Hence Rs.21.062 crores are considered as possession value of forest land diverted.</p>
6	Cost of suffering to Oustees.	0	No human habitation exists on forest land proposed to be diverted as such there is no social cost of rehabilitation of outsees. However, cost likely to be incurred in


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			R&R plan is provided in Project Cost.
7	Habitat Fragmentation Cost.	13.502	The cost due to habitat fragmentation has been pegged at 50% of NPV applicable as thumb rule i.e., $27.004 \times 0.50 = \text{Rs.} 13.502$ crore
8	Compensatory afforestation and soil & moisture conservation cost.	0	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value is Rs 27.665 crore which is included in Project Cost
	Total	64.269	

Table-B1: Project Cost Estimates

Abstract of the Project cost estimates			
S.N.	Particulars	Value in crores	Remarks
1	Capital Investment including preoperative expenses	1064.62	
2	R&R	497.98	Cost of human resettlement (R&R) in Tenancy land
3	Cost of Public facilities and administrative infrastructure		Cost included in the part of Land Cost of the Project
4	Net Present Value (NPV) payable to Forest Dept...Total Forest land=219.80 Hectares	27.004	Cost included in the part of Forest Cost of the Project
5	Cost of Compensatory Afforestation payable to Forest Dept. Total Cost of	27.665	Cost included in the part of Forest Cost of the Project

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	afforestation including soil and moisture conservation on Forest land of 219.80 Ha		
Project Cost	1617.27		

Table-C: Estimation of Benefits of Forest Diversion

Life of Project	: 32 years OC
Construction period	: Excluding 2 years of construction period

SN	Parameters	Calculations / Particulars				
		Net revenues due to Coal				
SN	Parameters	Rate (Rs.)	Unit	Amount (Rs.crore)		
1	Increase in productivity attribute to the Gondulpara Coal Block	i. Gross revenues from ROM Coal for Life-of-Mine (G10 Grade) @ Rs.3099 / tonne (Basic Selling Price) 116.68 MT	3099	Rs/MT	36159.13	
		ii. Tentative Operating Cost including depreciation, interest on loan payment for 32 Years, tax liability for 32 yrs	1985	Rs/MT	23160.98	
		Net Revenues (Benefits) due to Coal (1-2)			12998.15	
		iii. Revenue shared with nominated authority /state govt. (20.75 % of sale value)	643.04	Rs./MT	7503.02	
		Royalty (14% of base price)	433.86	Rs./MT	5062.28	
		iv. Forest Transit Fees	57.00	Rs./MT	665.08	
		Jharkhand Covid cess (Rs 10/ ton),	10.00		116.68	


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		DMF (District Mineral Fund - 10% of royalty)	43.39	Rs./MT	506.23	
	v	MMDR Act 2% of Royalty	8.68	Rs./MT	101.25	
	vi	Compensation Cess/Clean energy cess	400.00	Rs./MT	4667.20	
	vii	<u>GST @ 5%</u>	214.25	%	2499.85	
Total					21121.58	
3	No. of population Benefited due to the Project	Approx Population indirectly benefitted			3000	
4	Economic benefits due to direct & indirect employment due to the Project	Benefits due to direct employment for 521 persons (521 x 32Yrs x 267696 /Year)			446.30	
5	Economic benefits due to Compensatory Afforestation	Benefits from Compensatory Afforestation (CA) accruing over next 50 years monetise and discounted to the Present Value has been included as benefits from CA.			1959.95	
	Total Benefits (1+2+4+5)					36525.98

D. Calculation of Cost Benefit Ratio

Total Benefits (As per Table C: Estimation of benefits of Forest Diversion)	36525.98
Total Cost (As per Table (B+B1): losses of forests + Cost of the Project)	1681.54
Hence, Benefit/ Cost Ratio	21.91

Thus, the project gives positive Benefit/ Cost Ratio. The monetary returns of the Project are positive over the environmental losses.


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