

COST BENEFIT ANALYSIS REPORT
OF
LAFARGE UMIAM MINING PRIVATE
LIMITED

SHALE MINING PROJECT

NONGTRAI-SHELLA
PO SHELLA BAZAR -793112
EAST KHASI HILLS
MEGHALAYA

COST BENEFIT ANALYSIS REPORT
LAFARGE UMIAM MINING PRIVATE LIMITED
SHALE- SILTSTONE MINING PROJECT

INTRODUCTION

Lafarge Umiyam Mining Pvt. Ltd. (LUMPL) has been granted Mining Lease area over 4.90 ha at Shella Village for Shale-Siltstone Mine, located at Shella Village in East Khasi Hills district of Meghalaya. In addition to shale the project also operate the 100 ha Limestone Mine located at village Nongtra, district East Khasi Hills in Meghalaya, India.

LUMPL is a company incorporated in India, under the Indian Companies Act, 1956. LUMPL is a subsidiary of LafargeHolcim Bangladesh Limited (LHBL) (former Lafarge Surma Cement Ltd.).

LafargeHolcim, Switzerland (former Lafarge, France) and Cementos Molins, Spain together have made an investment of over USD 500 million for setting up the cross border project. This project is a landmark of India-Bangladesh friendship and cooperation. In November 2000, diplomatic letters were exchanged by the High Commissioner for the People's Republic of Bangladesh at New Delhi with the Foreign Secretary, Ministry of External Affairs, to confirm their understanding on the cross-border installations and uninterrupted operation for supply of inter alia limestone and Shale from the mines in Meghalaya to the cement plant in Bangladesh. The materials is transported through a 17 km elevated cross border Long belt Conveyor (LBC), out of which 7 km is in the India side and balance 10 km in Bangladesh side.

The mined out material from Shale-Siltstone mine will be carried over a distance of approx 1.5 km by dumpers to crusher located adjacent to Nongtra Limestone Mine. This material, will be crushed and transported to Cement Plant for use as an additive material in cement.

NAME OF THE PROJECT

Forest diversion proposal for Shale-Siltstone mining project over an area of 5.156 ha of forest land located at Shella Village in East Khasi Hills district of Meghalaya in favour of Lafarge Umiyam Mining Pvt. Ltd.

<u>Table 1(a) : Breakup of Land</u>							
Name of Project	Area as per Mine Plan (HA)	Total Area as per forest Application	Forest Land as per Application	Notified Forest land in Meghalaya as per Application	Revenue Forest Land as per Application	Non Forest Land as per Application	Life of mine in yrs
			Shella Village Meghalaya				
Shale-Siltstone Mine	4.9000	5.156	5.156		Nil	Nil	8

Lafarge Umiyam Mining Pvt. Ltd. obtained forest clearance on 28/02/2012 for diversion of 116.589 ha forest land for limestone mining and other ancillary facilities.

Lafarge Umiyam Mining Private Limited

A company of  LafargeHolcim and  CEMENTOS MOLINS

CIN No. U14107ML 1999PTC005707

PURPOSE FOR COST BENEFIT ANALYSIS

The cost benefit analysis is being undertaken for the diversion proposal for Shale-Siltstone mining project over an area of 5.156 ha of forest land located at Shella Village in East Khasi Hills district of Meghalaya in favour of Lafarge Umiam Mining Pvt. Ltd.

The report has been prepared on the basis of cost benefit analysis guidelines for forest division - 2017 issued by MoEF&CC vide circular no.7-69/2011-FC (pt) dated 01.08.2017.

Calculation of NPV has been considered "without prejudice" at the rate of Rs.7.30 Lakhs per ha. of Open forest (OF) as per tables shown below.

Eco-Value	Class and NPV rates in Rs.					
	Class I	Class II	Class III	Class IV	Class V	Class VI
Very Dense Forest	10,43,000	10,43,000	8,87,000	6,26,000	9,39,000	9,91,000
Dense Forest	9,39,000	9,39,000	8,03,000	5,63,000	8,45,000	8,97,000
Open Forest	7,30,000	7,30,000	6,26,000	4,38,000	6,57,000	6,99,000

Rate of NPV Rs.7.30 Lakhs per ha. of Open Forest (OF)			
Eco-Value Class	VDF (very dense forest)	MDF (moderately dense forest)	OF (open forest)
Class I	10,43,000	939,000	730,000

Calculation of NPV in respect to Lafarge Umiam Mining Pvt. Ltd. (Rate of NPV Rs.7.30 Lakhs per ha. of OF)		
Description	Amount in Rs.	Amount in Rs. Lakhs
Total NPV for (5.156 Ha. forest land)	37,63,880	37.638
10% NPV Value	3,76,388	3.7638
30% NPV Value	11,29,164	11.292
50% NPV Value	18,81,940	18.819

ESTIMATION OF COST FOR FOREST DIVERSION

SN	Parameters	Guidelines	Calculations	Cost (in Lakhs)
1	Ecosystems services losses due to proposed forest diversion	Economic value of loss of eco-systems services due to diversion of forests shall be net present value (NPV) of the forest land being diverted as Prescribed by Central Government (MoEF& CC)	Net present value (NPV) of the forest land being diverted = 37,63,880	37.638
2	Loss of animal husbandry productivity including loss of fodder	To be quantified and expressed in monetary terms or 10 % of NPV applicable whichever is maximum	10% of NPV is taken which is 3,76,388	3.7638
3	Cost of human resettlement	To be Quantified and expressed in monetary terms as per approved R & R plan	Actual cost of human resettlement as per R&R Plan = Nil	Nil
4	Loss of public facilities and administrative infrastructure (Road, buildings, schools, dispensaries, electric line, railways, etc.) on forest land, which would require 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	Actual cost - Nil	Nil

5	Possession value of forest land diverted	30% of the environmental 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 maximum	Circle rate of adjoining area @ 30% of NPV of forest land Rs 11,29,164	11.292
6	Cost of suffering oustees	The social cost of rehabilitation of 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 be not been shifted	No. of Ousteers = Nil	Nil
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 applicable as a thumb rule	50% of NPV of forest land = Rs 18,81,940	18.819

8	Compensatory afforestation and soil & moisture conservation cost	The actual cost of compensation afforestation and soil & moisture conservation and its maintenance in future at present discounted value	The calculated cost of Compensatory afforestation and soil & moisture conservation=(Rs.5.156X1X1.46)+Rs.5.156X1X7537/100000=Rs.7.53 lakhs+0.39 lakhs=Rs.7.92 lakhs	7.97
Total cost of forest diversion (in Lakhs Rs.)				79.4828

ESTIMATING BENEFITS OF FOREST – DIVERSION IN CBA

SN	Parameters	Guidelines	Calculation	Benefit (in Lakhs)
1	Increase in productively attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting	(Shale reserve) 0.92 MTX 27.12 (net profit/per ton) X 10 Rs. 249.50lakhs	249.50
2	Benefits to economy due to specific project	The incremental economic benefit in monetary terms due to the activities attributed to the specific project		1753.41
3	No. of population benefits due to specific project		Direct employment = 13 Indirect employment = 10 Considering avg. family size 5, then no. of population benefited = 115	115.00 (Nos.)
4	Economic benefits due to direct and indirect employment due to specific project		1. Direct employment benefit (Shale reserve X wage cost/ton X income tax (29.12%)) (0.92X135.54X10X0.2912) 2. Indirect employment benefit (Total manpower X4X300 (Av. working day/year)X wages/day (10X4X300X500)/100000 = 60.00	423.12
5	Economic benefits due to compensatory afforestation	Benefits from such compensatory afforestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of		0.00

		compensatory afforestation		
TOTAL (1+2+4+5)				2426.03

Ratio of COST: BENEFIT = Rs79.4828 lakhs/Rs. 2,426.03 lakhs = 1:30.523

Calculation As Per MOEF&CC Circular No. 7-69/2011-FC(PT.) Dated, 01 August, 2017

Place: Shillong

Date:

Yours faithfully,
For Lafarge Umiam Mining Private Limited



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Authorized Signatory