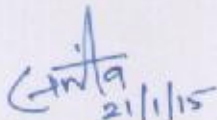




**Category of proposals for which Cost Benefit Analysis are applicable at
Penganga Opencast Mine, Village Wirur (Gadegaon), Tah. Korpana, Dist.
Chandrapur (M.S.)**

Sr. No.	Nature of proposal	Applicable/ Not applicable	Remarks
1	All categories of proposals involving forest land up to 20 Ha in Plains and up to 5 Ha in hills.	Not applicable	Nil
2	Proposals for defense installation purposes and oil prospecting (Prospecting only)	Not applicable	Nil
3	Habitation, establishment of industrial units, tourist lodges/ complex and other building constructions.	Not applicable	Nil
4	All other proposals involving forest land more than 20 Ha in plain and more than 5 Ha in hills including roads, transmission lines, minor medium and major irrigation projects, hydel projects, mining activities, Railway lines, location specific installation like Micro-wave station, auto repeater center, TV towers, etc.	Applicable	These are cases where a cost benefit analysis is necessary to determine whether diverting the forest land to non forest use is in the overall public interests.
5	Proposal for renewal of Mining Lease for forest land.	Not Applicable	Nil

Place: Urjagram, Tadali

Date:

 (Sanjeev Agrawal) Sr. Manager (Mining) Penganga OC Project	 (Rajiv Dass) Area General Manager WCL, Wani Area	 (Raghunath Panda) Dy. GM/ Project Officer Penganga OC Project
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COST BENEFIT ANALYSIS

PARAMETER FOR EVALUATION LOSS OF FOREST HAS BEEN ACCORDED FOR A PERIOD OF 50 YEARS AS PER GOVERNMENT DIRECTIVES

Mining of Mine : Penganga Opencast Mine of WCL, Wani Area

Quantum of forest land applied for : 46.04 Ha (All rights)

Life of Project : 14 years

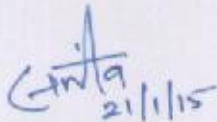
Division : Central Chanda Division, Chandrapur (MS)


1.	Forest Loss Calculations	
	Present NPV for 1 Ha of forest land	= 6.26 Lakh
	Present NPV for 46.04 Ha forest land	= 46.04 X 6.26 = 288.2104 Lakh
	Rate of C.A. for 1 Ha of forest land	= 4.1035 Lakh (2015-16)
	Value of C.A. for 46.04 Ha forest land	= 46.04 X 4.1035 = 188.9251 Lakh
	Double the amount of C.A.	= 2 X 188.9251 = 377.8502 Lakh
	Total loss	= 288.2104 + 377.8502 = 666.0606 Lakh
2.	Loss of animal husbandry productivity including loss of fodder	There is no any loss of animal husbandry productivity.
3.	Loss of human re-settlement	Due to diversion of forest land in this project, there is no loss involved on account of human resettlement.
4.	Loss of public facilities and administrative infrastructure (roads, buildings, schools, dispensaries, electric line, railway, etc) on forest land or which would require forest land if these facilities were diverted due to this project.	No administrative infrastructures such as roads, buildings, schools, dispensaries, electric line, railway, etc are affected due to diversion of forest land to this project. There will be no loss involved on this account.
5.	Environmental losses (soil erosion effect on hydrological cycle, wild life habitat, microclimate, upsetting of geological balance)	The details of environmental losses are determined as per given thumb rule for the forest area required for the project and are as follows: i) Density of the forest – 0.2 ii) Average density for the area


		<p>proposed to be acquired for the project - 0.2</p> <p>iii) Environmental value per hectare for density 1.0 (Rs in Lakh) – 126.74 Lakh</p> <p>iv) Environmental loss per hectare for forest of density to be acquired (Rs in Lakh) – $0.2 \times 126.74 = \mathbf{25.348 \text{ Lakh}}$</p> <p>v) Total forest area required for the project – 46.04 Ha</p> <p>vi) Total environmental loss for the forest area to be acquired for the project – $46.04 \times 25.348 = \mathbf{1167.021 \text{ Lakh}}$</p>
6.	Suffering of oustees.	There will not be any losses on this account as diversion of the forest land to this project will not affect any house or structure.

Place: Urjagram, Tadali

Date:


 (Sanjeev Agrawal)
 Sr. Manager (Mining)
 Penganga OC Project


 (Rajiv Dass)
 Area General Manager
 WCL, Wani Area


 (Raghunath Panda)
 Dy. GM/ Project Officer
 Penganga OC Project

COST BENEFIT ANALYSIS**I – CALCULATION OF COST****PARAMETERS FOR EVALUATION OF LOSS OF FOREST**

Nam of Mine : Penganga Opencast Mine, Wani Area

Quantum of forest land applied for : 46.04 Ha

Life of Project : 14 years

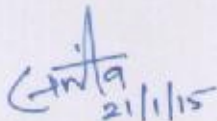


Division : Central Chanda Division, Chandrapur

Particulars	Evaluation of losses	Annual losses (Lakh)	Qualified in monitory terms for a period of 50 years (in Lakh)
PARAMETER NO. 1 Loss of value of Timber, fuel wood and minor forest produce on an annual basis including loss of Man hours per annum of people who derive livelihood & wages from harvest of these commodities (to be quantified and expressed in Monitory terms)	The details of loss of timber, fuel wood and minor forest produce etc. for the forest land required for Penganga Opencast Project. A) Timber, fuel wood & Bamboo B) Minor forest produce – Tendu Leaves (Annually) C) Loss of mandays of employment to people dependent on this forest patch for livelihood (Annually). (Due to no trees available in the proposed land)	Nil Nil Nil	Nil Nil Nil
PARAMETER NO. 2 Loss of animal husbandry productivity including loss of fodder	There is no any loss of animal husbandry productivity.	Nil	Nil
PARAMETER No. 3 Loss due to Human resettlement	As there is no human resettlement due to diversion of forest land, hence there will not be	Nil	Nil

	any loss on this account.		
PARAMETER No. 4 Loss of public facilities and administrative infrastructure.	No public facility and administrative infrastructure like road, etc exists on forest land which is proposed to be diverted in this project.	Nil	Nil
PARAMETER No. 5 Environmental losses.	Average Density of forest area proposed to be acquired for the project is 0.2 Environmental value per Ha for average density (0.2) considering @ Rs. 126.74 Lakh per Ha	46.04 X 0.2 X 126.74 = 1167.02 Lakh	1167.02 X 50 = 58351.09 lakh
PARAMETER No. 6 Suffering to oustees.	No human habitation exist on forest land proposed to be diverted, hence no loss on account of suffering to oustees from forest land.	Nil	Nil
Grand Total		Rs. 1167.02 Lakh	Rs. 58351.09 Lakh

Place: Urjagram, Tadali

Date:

 (Sanjeev Agrawal) Sr. Manager (Mining) Penganga OC Project	 (Rajiv Dass) Area General Manager WCL, Wani Area	 (Raghunath Panda) Dy. GM/ Project Officer Penganga OC Project
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COST BENEFIT ANALYSIS

II CALCULATION OF BENEFITS

PARAMETERS FOR EVALUATION OF BENEFIT

(Not withstanding loss of forest)

Mining of Mine : Penganga Opencast Mine of WCL, Wani Area

Quantum of forest land applied for : 46.04 Ha (All rights)

Life of Project : 14 years

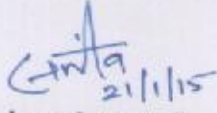
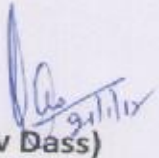

Parameters for calculation : Total Mineable Reserve 44.04 Mt
Coal price for "PROM" coal has been uniformly adopted

SI No	Parameters	Evaluation benefits	Qualified in Monitory terms per annum (4.0 Mt per yr)	Qualification of Benefit in monitory terms connected to the period (50 yrs) evaluation of coal benefit ratio
1.	Increasing of productivity attributed to specific project.	Sale price of PROM @ Rs. 1057.50 per Tonne	Rs. 42300.00 Lakh	Rs. 2115000 Lakh
2.	Benefit of Company	a) Royalty @ Rs. 148.05/ Te. b) SED @ Rs. 10 per Tonne c) Sales Tax @ Rs. 66.08 per Tonne d) Clean energy Cess @ Rs. 100 per Tonne <hr/> e) Total IB) Electricity Generation 1Te = 1248 units @ Rs. 5.00/ unit <hr/> I(A&B) Total II) Other benefits not qualified in monitory terms a) Growth of ancillary industries. b) Development of surrounding area.	Rs. 5922.00 Lakh Rs. 400.00 Lakh Rs. 2643.20 Lakh Rs. 4000.00 lakh <hr/> Rs. 12965.20 Lakh Rs. 249600 Lakh Rs. 262565.20 Lakh Cannot be expressed in monetary terms	Rs. 296100.00 Lakh Rs. 20000.00 Lakh Rs. 132160.00 lakh Rs. 200000.00 Lakh Rs. 648260.00 Lakh Rs. 12480000 Lakh Rs. 13128260.00 Lakh

		c) Increased per capita income d) Compensatory afforestation		
3.	Population benefited	Population is indirectly benefited	Nil	Nil
4.	Employment potential	307 persons	Rs. 2343.20 Lakh	Rs. 117160 Lakh
5.	Cost of acquisition of facility on non forest land wherever feasible.	Occurrence of coal is a natural phenomena and alternate site is not feasible.	Nil	Nil
6.	Loss of (a) agricultural and (b) husbandry production due to diversion of forest land.	A) Agricultural – Nil B) Animal husbandry – Nil	Nil	Nil
7.	Cost of rehabilitation of displaced persons as different from compensatory amount given for displacement.	Forest land applied for diversion is devoid of any human habitation.	Nil	Nil
8.	Cost of supply of tree fuel wool to workers residing in or near forest area during the period of construction.	The user agency is giving the cost of one gas cylinder to the workers for domestic use as such supply of fire wood does not arise.	Nil	Nil
9.	Total		Rs.307208.40 Lakh	Rs. 15360420.00 Lakh

Place: Urjagram, Tadali

Date:

 (Sanjeev Agrawal) Sr. Manager (Mining) Penganga OC Project	 (Rajiv Dass) Area General Manager WCL, Wani Area	 (Raghunath Panda) Dy. GM/ Project Officer Penganga OC Project
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COST BENEFIT ANALYSIS

III CALCULATION OF BENEFIT/ COST RATIO

Total Benefits (As per II calculations) = Rs. 15360420.00 Lakh

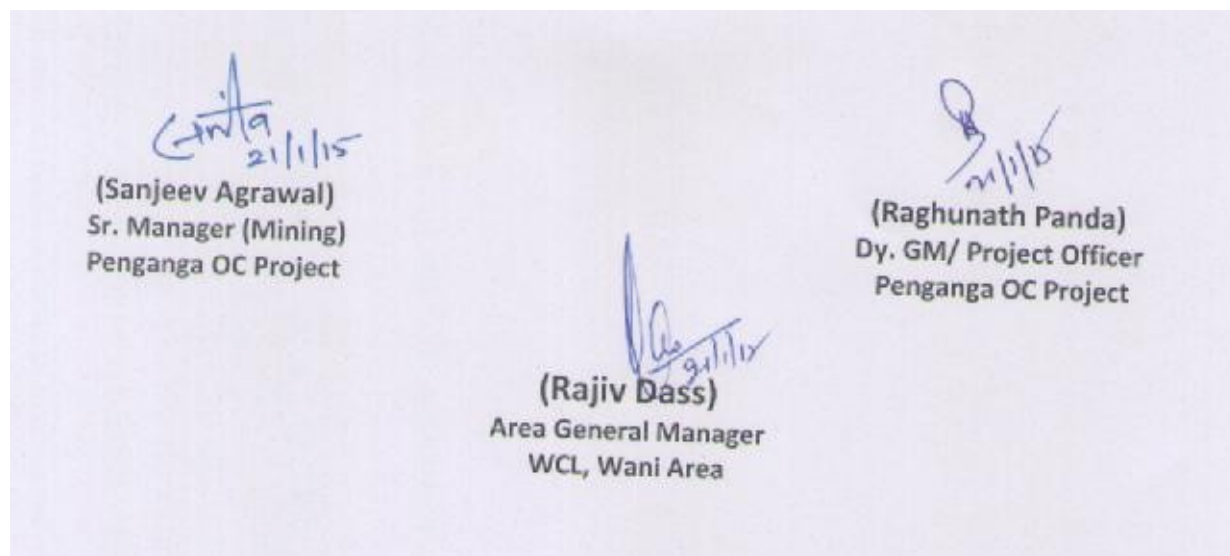
Total Losses (As per I calculations) = Rs. 58351.09 Lakh

Hence, Benefit/ Cost Ratio = $\frac{15360420.00}{58351.09} = 263.24$

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

Place: Urjagram, Tadali

Date:



The image shows three handwritten signatures and their corresponding printed names and titles. On the left, a signature is dated 21/1/15, followed by the text: (Sanjeev Agrawal), Sr. Manager (Mining), Penganga OC Project. In the center, a signature is dated 21/1/15, followed by the text: (Rajiv Dass), Area General Manager, WCL, Wani Area. On the right, a signature is dated 21/1/15, followed by the text: (Raghunath Panda), Dy. GM/ Project Officer, Penganga OC Project.