

Cost Benefit Analysis of Proposed Forest Diversion for establishment of Oil Depot at  
Village- Arda under Kirmira Tahasil of district Jharsuguda by Bharat Petroleum  
Corporation Ltd through IDCO, Bhubaneswar.

A. (i) Proposed Forest area for Diversion: 39.599ha


(ii) Forest Crop Density: Less than 0.2

**B: Estimation of Cost of Forest diversion.**

(Ref: Guide line issued by MoEF&CC, New Delhi vide No 7-69/2011-FC (pt.) Dated 01<sup>st</sup> August, 2017)

Sl. No	Parameters	Environmental loss in monetary terms. (in Lakh Rs)	Remark
1	Ecosystem Services losses due to Proposed Forest Diversion.	247.104	NPV @6.24lakh per Ha.
2	Loss of Animal husbandry Productivity, including loss of Fodder	24.71	Not used as grazing ground.10% of NPV=24.71 lakh
3	Cost of Human Resettlement	0	No Resettlement is required.
4	Loss of Public facilities and administrative infrastructure (Roads, Building, School, Dispensaries, Electric Lines, Railway Etc) on Forest land which would require forest land, if these facilities were diverted due to the project.	0	No such loss is anticipated.
5	Possession value of Forest land diverted	391.40	30% of NPV= 74.13 Lakh or @4.00 lakh per Ac over 97.850 Ac = Rs391.40
6	Cost of Suffering to Oustees	0	There is no Displacement / Rehabilitation due to the Project.
7	Habitation Fragmentation Cost	123.552	50% of NPV=123.552
8	Compensatory Afforestation and Soil Moisture Conservation Cost	299.87	CA cost @ 1.75 lakh per ha *79.2 ha= 138.60 lakh + fencing @Rs 7.00 lakh per Km * 10.00Km=70.00 Lakh+ SMC @25% of (138.60+70)= 52.15 Lakh = 260.75 Lakh EPA 15%= 39.12 Lakh
	Total Cost	1086.636	For 50 Years.

The cost per year is 1086.636/50=21.733 lakh

  
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### C. Estimated Benefits of Forest Diversion:

Sl No	Parameters	Benefits Per Year in Lakh Rs	Remark
1	Increase in Productivity attribute to the Project	13921.25	<b>Motor spirit</b> - 144000 KL*Rs71000 = 1022.40 crore <b>HSD</b> - 600000KL*Rs70000= 4200.00 Crore <b>Speed Petrol</b> -10000 KL*Rs 73000= 73.00 Crore <b>Premium Diesel</b> -10000KL*Rs 72000= 72.00 Crore <b>Superior Kerosene</b> ( Non Subsidized) - 24000KL*Rs65000 = 156.00 Crore <b>Furnace Oil</b> -11000KL*Rs41000 = 45.10 Crore Total Annual sale 5568.50 Crores. Excise duty & VAT etc 50%=2784.25 Crore Profit 5% of 2784.25
2	Benefit to Economy due to the Specific Project	278425.00	VAT & Other Taxes 50% of sale value
3	No of population benefited due to specific project	00	Including plant and mine(both Direct and Indirect) 358 nos
4 (a)	Economic Benefits due to direct employment	90.00	15 nos direct employment @Rs 50,000/- per month
(b)	Due to indirect employment	720.00	150 no Indirect @Rs40000/- PM
5	Economic Benefit due to Compensatory Afforestation	5.40	The Economic Benefit due to compensatory Afforestation after 50 year is at Rs8.00 lakh per hectare. After reducing to its present value it comes to Rs 6814.84 . Hence for 79.20 ha of CA plantation, the present value of Plantation calculated to be Rs 539735.3 .#
	Total	293161.7	
			Cost Benefit Ration = <b>1:13489</b>

# Calculation of value of the Compensatory afforestation Plantation as at 50 years.



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Calculation of Economic Benefits of Compensatory Afforestation (Planatation)		
Sl. No.	Particulars	Value (Rs. / ha.)
1.	Value of timber and fuel wood	1,52,830
2.	Value of NTFPS	7,631
3.	Value of fodder	2,958
4.	Value of Eco-tourism	65,113
5.	Value of bio-prospecting	25,553
6.	Value of Eco-logical services of forest	1,44,332
7.	Value of flagship species	2,58,400
8.	Carbon sequestration value	1,20,780
	<b>Total value of forest</b>	<b>7,77,597</b>
		Say Rs. 8.0 lakh / ha. of forest area in the country

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