

Annex- A

**COST BENEFIT ANALYSIS FOR DIVERSION OF FOREST LAND**

**Name of the Project:-** Construction of Integrated Kashang HEP Stage-II & III (130 MW)

**Nature of Proposal:-** Diversion of 0.4148 Ha. of Forest Land under FCA, 1980 for Construction of Integrated Kashang HEP Stage-II & III (130 MW)

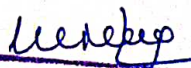
**Total Forest Area:-** 0.4148 Ha

**Purpose:-** The Cost Benefit Analysis is being undertaken for proposed diversion of Forest Land for Construction of Integrated Kashang HEP Stage-II & III (130 MW).

**Cost Benefit Analysis as per MoEF&CC Guideline for Forest Land Diversion .**

**Table-A:- Case under which a Cost-Benefit Analysis for Forest Diversion is required.**

Sr. No.	Nature of Proposal	Applicable/Not Applicable	Remarks
1.	All category of forests involving forest land upto 20 hectares in plains and 5 hectares in hills	Not Applicable	These proposals may be considered on case to case basis and value judgment
2.	Proposal for defence installation purpose and oil prospecting (prospecting only)	Not Applicable	In view of National priority accorded to these sectors, the proposal would be critically assessed to help ascertain that the utmost minimum forest land is diverted for non-forest use.
3.	Habitation, establishment of industrial units, tourist lodge complex and other building construction	Not applicable	These activities being detrimental to protection and conservation of proposals would be rarely entertained.
4.	All other proposal involving forest land 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 line, location specific installation like micro wave stations, auto repeater centres, TV towers etc.	Applicable	These are cases where a cost benefit analysis is necessary to determine when diverting the forest land to non-forest use in the overall public interest

  
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# **COST BENEFIT ANALYSIS** **Estimation of Cost of Forest Diversion**

Sr. No.	Parameters	Value expressed to Monetary terms and in Detail	Remarks
1.	Ecosystem services losses due to proposed forest diversion	Rs. 6,61,934/-	Economic value of loss of eco-system services due to diversion of forest shall be the net present value (NPV) of the forest land being diverted as prescribed by the Central Government (MoEF & CC).
2.	Loss of animal husbandry productivity, including loss of fodder	Rs. 66,194/-	To be quantified and expressed in monetary terms or 10% of NPV applicable whichever is maximum
3.	Cost of human resettlement	Since no residential village/ area is getting affected, there will be no cost of human resettlement.	To be quantified and expressed in monetary terms as per approved R&R plan
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.	Since no public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways, etc.) on forest land, being diverted due to the project, there will be no such loss.	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion
5.	Possession value of forest land diverted	30% of environmental costs (NPV) due to loss of forests i.e. Rs. 1,98,580/-	30% of environmental costs (NPV) due to loss of forests or circle rate of adjoining area in the district should be added as a cost component as possessor value of forest land whichever is maximum
6.	Cost of suffering to outsiders	Nil	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 he not been shifted.

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Habitat Fragmentation Cost	Rs. 3,30,967/-	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.
8. Compensatory afforestation and soil & moisture conservation cost	Rs. 2,81,058/-	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value

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Table: C

### Estimating Benefits of Forest Diversion in Cost Benefit Analysis

Sr. No.	Parameters	Value expressed in monetary terms	Remarks
1.	Increase in Productivity attribute to the specific project	Growth of local business by almost Rs. 2,00,000,00.00 (Two Crore Only) (Approx.)	To be quantified & expressed in monetary terms
2.	Benefits to economy due to the specific project.	The economic benefit in monetary terms due to the activities attributed to the specific project will be Rs. 200.00 Lakhs (Two Crore Only). (Approx.)	The incremental economic benefit in monetary terms due to the activities attributed to the specific project.
3.	No. of population benefited due to specific project.	About 2000 man days job will be generated by the construction of the project, which will be paid with average salary of Rs. 675/- per day. That means around Rs. 13.50/- Lakhs will be paid as salaries to the workers.	
4.	Economic benefits due to direct and indirect Employment due to the project.	Directly:- 10 Indirectly:- 1990	
5.	Economic benefits due to Compensatory Afforestation	Economic benefits due to Compensatory Afforestation includes Benefits due to animal husbandry productivity including fodder and fuel wood , Ecosystem services Benefits due to proposed forest diversion. Possession value of forest land diverted will be Rs. 140529/-	

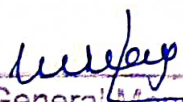
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# Summary of Cost Benefit Analysis for the Project

Sr. No.	Total Cost/Loss	Evaluation
1.	Ecosystem Services losses Rs. 6,61,934/-	Increase in Productively attribute to the specific project Rs. 20000000/-
2.	Loss of animal husbandry productivity including loss of fodders= Rs. 66,094	Benefits to economy due to the specific project Rs. 20000000/-
3.	Loss of public facility=Nil	
4.	Possession Value of forest land diverted= 1,98,580/-	Ecological gain from compensatory afforestation on 0.4148 hectares on degraded land would be 140529/-
5.	Habitat fragmentation cost = 3,30,967/-	Approx. 2000 man days job will be generated by the construction of the project, which will be paid with average salary of Rs. 675/- per day. That means around Rs. 13.50/- Lakhs will be paid as salaries to the workers. Basic living amenities including alternative fuel (LPG, Solar Cooker etc) will be supplied to labours/workers. Total Cost of Employment= 13,50,000/-
6.	Compansatory afforestation and soil & moisture conservation cost=2,81,058/-	
	Total Cost/loss= 1538633	Total Gain/Benefit from Project=20000000+20000000+140529+1350000= 41490529/-
Cost Benefit Ratio= Total Benefit: Total cost= 41490529: 1538633=27, Cost benefit Ratio is as 27:1		

Which is >1, so project is found viable based on given / above described criteria.

  
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