COST BENEFIT ANALYSIS FOR FOREST LAND DIVERSION

(Ref: MoEF guideline No. 7-69/2011-FC (Pt.) dated 01st August 2017)

Diversion of 56.833 ha forest land for the Construction of 132 kv single circuit transmission line on double circuit towers from Rengpang to Tamenglong under North Eastern Region Power System Improvement Project(NERPSIP), under **Divisional Forest Officer, Tamenglong.**

PROJECT:

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

Sl No	Nature of Proposal	Applicable / Not Applicable	Remarks
1	All Categories of Proposal involving forest Land upto 20 hectares in plains and upto 5 hectares in hills	Not Applicable	
2	Proposal for defence installation purpose and oil prospecting (Prospecting Only)	Not Applicable	
3	Habitation, Establishment of Industrial units, tourist lodge complex and other building construction	Not Applicable	
4	All other proposals involving forest land more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission line, minor, medium and major irrigation projects, hydro projects, mining activity, railway lines, location specific installations like microwave station, auto repeater centres, TV Towers etc.	Applicable	These are case where a cost benefit analysis is necessary to determine when diverting the forest land to non-forest used in the overall public interest

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	Considered as **50% of NPV** i.e. **Rs 247.046 in Lacs**
8	Compensatory afforestation and soil and moisture conservation cost	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value	Cost of Compensatory Afforestation **Rs. 209.124 in Lacs**
Total cost of diversion of 56.833 ha of forest land			**= Rs 950.262 in Lacs**

Table C: Existing guidelines for estimating benefits of forest diversion in CBA

Sl No	Parameter	Remarks	Monetary Equivalent
1	Increase in productively attribute to the specific project	To be quantified and expressed in monetary terms avoiding double counting	The project is a part of establishing 132/33 kv transmission system in Tamenglong District Head Quarter. The line has the capacity to carry 50 MW of power. There will be no line constraint for Tamenglong District Head Quarter areas and its neighbouring villages for the last 50 years. So there will be tremendous impact in productivity in terms of developing robust grid infrastructure, growth in industrialization, irrigation, Drinking Water, Telecommunication and distribution of grid power to rural households. This will boost up a direct impact to socio economic development due to availability of abundance quality power supply of 24x7. Entire population of Tamenglong District Headquarter areas and its neighbouring villages can be directly benefited by the project. The direct monetary return of the project as a whole is calculated by considering average burden of 10MW with an average cost of energy @ Rs 4.50/Kwh for 25 years = Rs 4.50 x 10 x 1000 x 25 x 365 x 24 = Rs 98550.00 lacs.
2	Benefits to economy due to specific project	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	As per the Detailed project report	
4	Economic benefits due to direct and indirect employment due to the project	As per detailed project report	One hundred nos. of temporary labourers approximately @ Rs 300 /day will get work during execution of the project for a period of 18 months = Rs 300 x 100 x 18 x 30 = Rs 162.00lacs.
5	Economic benefits due to Compensatory afforestation	Benefits from such compensatory forestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of compensatory afforestation. *For benefits of CA the guideline of the Ministry for NPV estimation may be consulted	Benefits from Compensatory afforestation accruing over next 50 years is huge
TOTAL = Rs. 98712.00 Lacs			

Cost Benefit Ratio (CB Ratio) = $\frac{\textbf{98712.00}}{\textbf{950.262}}$

= 103.87 : 1

Managing Director
Manipur State Power Company Ltd.
Imphal

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

Sl No	Parameter	Remarks	Monetary Equivalent
1	Ecosystem services losses due to proposed forest diversion	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 as prescribed by the Central Government (MoEF&CC). Note: In case of National Parks, the NPV shall be ten (10) times the normal NPV and in the case of wildlife century, the NPV shall be five (5) times the normal NPV or otherwise prescribed by the Ministry or any other competent authority. **NPV** rates taken @ Rs 10.43 Lacs per ha under very dense forest for 8.033 ha, @ Rs 9.39 per ha under Moderately dense forest for 25.870 ha and @ Rs 7.30 lacs per ha under Open Forest for 22.930 ha.	Total value of **NPV = Rs. 494.092 in lacs**
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	NIL, As the proposed Project is an overhead Transmission Line, there will be no loss of animal husbandry productivity including loss of fodder. After completion of tower erection and stringing, natural vegetation / plantation of dwarf species will fillup the area which have been temporarily damaged during construction.
3	Cost of Human resettlement	To be quantified and expressed in monetary terms as per approved R&R plan	NIL. There is no human resettlement issue in this project. Hence no cost involved in any R&R scheme.
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	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion	NIL. There is no requirement of any diversion of Public facilities and administrative infrastructure (Roads, Building, Schools, dispensaries, electric lines, railways etc.) under this project
5	Possession value of forest land diverted	30% of the environmental cost (NPV) due to loss of forests or circle rate of adjoining area in the district should be added as a cost component as possession value of forestland whichever is maximum	Not Applicable. Since the possession of diverted forest land is not completely required by the User Agency after completion of the project and during operation and maintenance period. As per existing MoEF guideline, dwarf species plantation will be undertaken within the corridor (RoW) of the diverted forest land by Forest Department. Only looping & pruning of tree branches near the electric conductor will be required during the maintenance period of the project.
6	Cost of suffering to oustees	The social cost rehabitation of oustees (in addition to the cost likely to be incurred in providing residence, occupation and social services as per R&R plan) be	Not Applicable for this project since there is no resettlement involved.