

COST BENEFIT ANALYSIS FOR DIVERSION OF FOREST LAND

Name of the Project: - Construction of 66kV Double Circuit transmission line from proposed 220/66kV Sub-Station at Nadukhar to existing 66/22kV Sub-Station Gumma Shimla in the jurisdiction of Shimla Forest Division Dist. Shimla.

Nature of Proposal: - Diversion of 8.4085 Ha of forest land in favour of HPSEB Ltd. for construction of 66kV Double Circuit transmission line from proposed 220/66kV Sub-Station Nadukhar to existing 66/22kV Sub-Station Gumma Shimla (Linear).

Total Length of the Project: -9.139 km


Total Forest Area: - 8.4085 Ha

Purpose: - The Cost Benefit Analysis is being undertaken in compliance to apt guidelines issued by MoEF&CC for diversion of Forest land during August, 2017 and in respect of proposed c/o 66kV D/C transmission line from proposed 220/66kV Sub-Station Nadukhar to existing 66/22kV Sub-Station Gumma Shimla in the jurisdiction of Shimla Forest Division Dist. Shimla and

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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Table-B
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. 89,92,639/- | 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. 8,99,264/- | 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, 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, 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 | Rs.26,97,792/- i.e. 30% of environmental cost (NPV) due to loss of forests i.e. | 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 since 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. |
| 7. | Habitat Fragmentation Cost | Rs. 44,96,320/- i.e. 50% of NPV applicable | While the relationship between simplicity the cost due to Fragmentation has been pegged at 50% o NPV applicable as a thumb rule. |
| 8. | Compensatory afforestation and soil & moisture conservation cost | Rs. 51,46,313/- | 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. 2,51,41,20,000/- | 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. 25,14,12,000/- | 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 demand forecast for the project (approx.) 4,07,000/- people shall be benefited through this project in the initial year of project commissioning. Thereafter minimum growth of 3% is expected each year. | As per the Detailed Project Report |
| 4. | Economic benefit due to Direct and indirect Employment due to the project | Direct:- Nil Indirect:-58400@Rs.525/- = Rs. 3,06,60,000/- Total of Directly and indirectly:- 3,06,60,000/- | As per the Detailed Project Report |
| 5. | Economic benefit due to compensatory afforestation | Economic benefit due to compensatory afforestation include benefits animal husbandry productivity including fodder and fuel wood Eco system services benefits due to proposed forest land diverted will be Rs. 51,46,313/- | |

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Summary of Cost Benefit Analysis for the Project

| Sr. No. | Total Cost/Loss | Evaluation |
|---------|--|---|
| 1. | Ecosystem Services losses Rs.89,92,639/- | Increase in productivity attributed to the specific project is Rs. 2,51,41,20,000/- |
| 2. | Loss of animal husbandry productivity including loss of fodders= Rs.8,99,264/- | Benefits to economy due to specific project Rs.25,14,12,000/- |
| 3. | Loss of public facility=Nil | |
| 4. | Possession Value of forest land diverted= Rs.26,97,792/- | |
| 5. | Habitat fragmentation cost = Rs. 44,96,320/- | |
| 6. | Compensatory afforestation and soil & moisture conservation cost= Rs.51,46,313/- | |
| | Total Cost/loss= Rs.2,22,32,328/- | Total Gain/Benefit from Project = 2,51,41,20,000+25,14,12,000+3,06,60,000+51,46,313 = Rs.2,80,13,38,313/- |

Cost Benefit Ratio = (Total Benefit)/(Total cost) = 2801338313/22232328 = 126.003 which is > 1, so project is found viable based on given / above described criteria.

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