Name of Project: Thana Plaun HEP (191MW) in Distt. Mandi, H.P
Name of Executing Agency: Himachal Pradesh Power Corporation Limited.
Forest land involved: 406.79 Ha.

CHECKLIST NO:33

Cost Benefit Analysis

Case under which a cost –benefit analysis for forest diversion are required

Sr.No.	Nature of proposal	Applicable /not applicable	Remarks
1.	All categories of proposals involving forest land up to 20 hectares in plains and up to 5 hectare in hill.	Not applicable	
2.	Proposal for defence installation purposes and oil prospecting (prospecting only).	Not applicable	
3.	Habitation, establishment of industrial, units, tourist lodges complex and other building construction.	Not applicable	
4.	All other proposals involving forestland 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 lines, location specific installations like micro-wave stations, auto repeater centres, TV towers etc.	Applicable	Thana Plaun Hydro-electric Project (191 MW) is conceived as storage cum run-of-river scheme. The proposed Thana Plaun Hydro-electric Project located in Mandi District of Himachal Pradesh, lies between Longitude 76^0 15' to 77^0 45' East and Latitude 35^0 45' to 32^0 30' North. After detailed survey/studies the land requirement for the project has been finalised. Total Forest land required for the construction of the project is **406.79 hectares.**

General Manager
TM & TP HEPs HPPCL
Kotli, Distt. Mandi (H.P.)

Parameters of Evaluation of Loss of Forest (Cost)

No.	Parameters	Rates of NPV (in Rs.)	Value of loss (in Rs)
1.	Ecosystem services losses due to proposed forest diversion.	6, 57,000/- per Ha.	267261030/-
2	Loss of animal husbandry productivity, including loss of fodder.	10 % of NPV	26726103/-
3.	Cost of human resettlement	Nil	Nil
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.	Nil	Nil
5	Possession value of forest land diverted	30 % of NPV	80178309/-
6.	Cost of suffering to oustees	Nil	Nil
7.	Habitat Fragmentation cost	50 % of NPV	133630515/-
8.	Compensatory afforestation and soil & moisture conservation cost.	----------	182060121/-
	Total		**689856078/-**
			Or say Rs. 6898 lakh.

General Manager
TM & TP HEPs HPPCL
Kotli, Distt. Mandi (H.P.)

PARAMETERS OF EVALUATION OF BENEFITS NOT WITH STANGING LOSS OF FORESTS (BENEFITS).

Nature of Proposal			Hydro Electric Project		
Sr. No.	**Parameter**	**Applicability vis-à-vis nature of proposal and explanation.**	**Quantity of Benefit**	**Rate in Rupees**	**Monetary Value of Benefit (Rs. in lakh)**
1.	increase in productivity attributable to the specific project	Applicable as in case of HEP. Though irrigation is not feasible in this run of the river project hence in primary sector no benefit may accrue yet the productivity increase in secondary and tertiary sector is likely to increase. This excludes revenue from sale of power *	500 units	10 000/- unit per year	2500.00
2.	Benefits to economy due to specific project.	Revenue from sale of power annually. For the total project period ^ it would increase tremendously.	668.07 Gwh (Giga-watt-hour) or 668070000 units Per year	3.00 per unit	2004.21
3.	No. of population benefited due to specific project.	Increase availability of power will give impetus to industry and service sector as indirect employment etc#	5000 persons	1000 per capita per year	2500.00
4.	Economic benefit due to direct and indirect Employment due to the project.	Direct employment (for period of three years)$ (construction phase)	1200 persons	150000 per year	8100.00
		Direct employment (for a period of 50 years)$ (Post construction phase)	200	240000 per year	24000.00
5	Economic benefits due to Compensatory afforestation.		50 years	NIL	0
	Total (Benefits)	-	-	-	**39104.2 Lakh**

Notes @ Explanations.

1.*The benefiting units in terms of an increase in productivity vary greatly in secondary and tertiary sectors. As such this kind of distant benefit is difficult to quantify and monetize. However, the taking the beneficiary as units (whether as industries, service sectors companies or individuals) the quantity of benefit is attempted to be defined for a period of 50 years. This is highly conservative estimate.

2. ^If the benefit to the economy is calculated for a period of 50 years (ie expected life of the project) then it comes to 100210.5 lac Rupees.

3. #However, the indirect employment in a post construction scenario is expected to then rise as the power supply begins to the industries and urban areas. About 5000 people are expected to benefit annually for a period of 50 years in the secondary and tertiary sectors @ Rs 1000 per person in a year gaining benefit of Rs 100 lac annually.

4. $Direct employment of people during construction period is to be the tune of 1200 persons @Rs 225 per day for about 300 days in a year. During the construction phase approximately 250 people in service and trade would also benefit for which no monetization is possible. The direct employment would come down drastically in a post construction phase and about 200 persons would be there for maintenance and for power supply as regular employees @ Rs 20000/-pm average salary (annual Rs 240000/-)

Cost Benefit Analysis.

	Rs in lakh
Total loss(cost)	**6898 lakh**
Total Benefit	**39104.2 Lakh**
Cost Benefit Ratio	**1:5.7**

General Manager
TM & TP HEPs HPPCL
Kotli, Distt. Mandi (H.P.)