COST BENEFIT ANALYSIS

Project cost:

1. Cost of the Equipments: 75.27 Cr.
2. Cost of the owner supplied materials: 10.26 Cr.
3. Type test charges: Nil
4. Cost of the Foundation: 44.64 Cr.
5. Cost of the Erection of towers: 11.86 Cr.
6. Cost of the Stringing of the wires: 4.46 Cr.
7. Other contingent expenditures:
    a. Forest clearance charges: As per demand of the forest authority of Tuglakabad & Faridabad against CA and NPV.
    b. ROW clearance charges: Nil
    c. Various insurence charges: As per actual
    d. Price variation on the awarded cost of the project : As per actual

Benefit of the Project:

1. Direct Benifits:
    a. According to CEA study the peak demand in Delhi by the end of 12^{th} & 13^{th} plan would be about 7400 MW and 10, 400 MW respectively. To meet the rising power demand of National Capital Delhi the Govt. would require importing power from the other regions.
    b. Looking into future power demand and existing fragile power transmission network of National Capital Territory, Powergrid has been entrusted to establish a 400 KV substation in Tuglakabad area of Delhi.
    c. This 400 KV Tuglakabad substation will get more than 2000 MW through this transmission lines for further distribution in Delhi.
    d. This 2000 MW of additional power strengthen the power scenario of Delhi and facilitate secure and reliable power supply to NCT Delhi.

2. Indirect Benifits: During the construction of the project skilled and unskilled manpower in large numbers shall be employed for appreciably long duration in addition to the engineers, supervisors and non technical manpowers. The adjoining area of the substation shall also be indirectly get benifited as these workers will

reside in nearby villages and colony area. Local vehicles shall also be hired for transportation of man and materials to working site. For the security of the establishments ex-servicemen were also get the employment opportunities. After completion of the project surrounding populations will get recurring benefits as for running of substation their cooperation will always be needed on monitoring term & conditions.

Thanking you.

Signature of the User Agency

Seal

TRIVEDI
Manager
Ltd.
400/220
400/220 kV
Opp. Sarai Kale Khan

COST BENEFITS ANALYSIS

Projects: LILO of both circuits of 400 kV D/C Bamnauli-Samayapur Transmission Line at Tughlakabad Sub-Station.

- Total Length of the transmission line passing through RF area (Under Delhi Forest Division) = 6.018 Km.
- Total Forest area proposed for diversion (Under Delhi Forest Division) = 27.68 Ha.

Parameter for evaluation of loss of Forest (as per Form-IV-b of MoEF Hand book)

S. No.	Parameters	Road , Transmission Lines & Railway Lines
01.	Loss of values of timber, fuel wood and minor forest produce on an annual basis, including loss of man-hours per annum of people who derived livelihood and wages from the harvest of theses commodities.	Loss of value of timber is negligible since there will be minimum felling of trees for construction of transmission line in hilly terrain where enough ground clearance is available. Moreover, the minimum no. of trees required to be felled will be in possession of the state Forest Department. For which the operational cost/timber extraction cost will be beared by POWERGRID . In addition to this Net present value (NPV) will be paid against the value of timber, fuel wood etc. of the proposed land for diversion. Since construction of transmission line doesn't deprive people from earning of livelihood in forest area, hence loss of man-hours of people is also not applicable. Overall, it is assumed that there will be negligible loss of value of timber, fuel wood, minor forest produce etc. due to construction of the transmission line in over the forest area.
02.	Loss of animal husbandry productivity, including loss of fodder.	Not applicable. Productivity of livestock will not be affected due to construction of the transmission line.
03.	Cost of human resettlement	Since there is no displacement of people due to the project hence there would be no cost of human resettlement.

04.	Loss of public facilities and administrative infrastructure (roads, building, school, dispensaries, electric lines , railways etc.) on forest land, or which would require forest land if these facilities were diverted due to project.	Not applicable, since these facilities are not available inside the proposed forest area for diversion.
05.	Environmental losses: (soil erosion, effect on hydrological cycle, wildlife habitat , microclimate upsetting of ecological balance.	Environmental losses is quantified as follows: • Total RF area proposed for diversion (under Delhi Forest Division)= 27.68 Ha. • Environmental value of one hectare fully stock forest (density 0.4) for period of 50 years is = 126.74 lakh • Considering density of the proposed RF=0.4 Therefore , total environmental loss for a period of 50 year is worked out as = 127.74lakh x0.4x27.68 ha =**1414.337** Lakh
06.	Suffering to oustees	Not applicable since there will be no displacement of people.
	Total Loss (Calculated for 50 Years)	**Rs. 1414.337 Lakh**

Parameters for evaluation of Loss of Forest (as per Form VI-c)

S.No.	Parameters	Roads, Transmission lines & Railways Lines
01.	Increases in productivity attributable to the specific project.	The project will enable availability of electricity in abundance by which the people of Haryana will be directly benefitted. This will accelerate industrialization of the state will directly generate maximum employment opportunities in these areas and boosting up the economy of the state. Again directly the project will have the potential for temporary employment generation for local peoples of Appx. 10 lakh man-days for period of 3 years. The directly monetary return of the project is calculated as below the table.
02.	Benefits to economy	
03.	No. of population benefited	
04.	Employment potential	
05.	Cost of Acquisition of facity on non-forest land wherever feasible.	No land acquisition takes place due to the projects.
06.	Loss of (a)agriculture & (b) animal husbandry production due to diversion of forest land	There will no negative impact on agriculture and animal husbandry production due to the project.
07.	Cost of rehabilitating the displaced person as different form compensatory amounts given for displacement.	There will be no project dis placed persons requiring rehabilitation.
08.	Cost of supply of free fuel wood to workers residing in or near forest area during the period of construction.	Not Applicable

Benefits of the Project in Monetary Terms

Monetary return of the Project for 50 Years

a)	Maximum capacity of the line loading	= 2000MW= 2000000KW
b)	Considering the average burden of the line	= 1600MW=1600000KW
c)	Cost of Power(assume an average)	= Rs.1.20 per Kwh
d)	Monetary return of the Project for 50(Fifty) years	= 2000000x24x30x12x50x1.20 =Rs.103680,00,00,000

Cost benefit Ratio		Monetary return of the projet for 50(Fifty) years
		Environmental loss for a period 50 (Fifty) Years
		Rs.103680,00,00,000
		Rs.141,43,37,000

Cost Benefit Ratio = 733.06:1