COST BENIFIT ANALYSIS & COST BENEFIT RATIO

1.0 Introduction

Jharkhand Urja Sancharan Nigam Limited (JUSNL), A public Enterprise under Govt Of Jharkhand decided to construct a GSS near by Chatra Town to meet the problem of poor electricity supply in Chatra Town so that target of 24X7 can be achieved by 2018.As per GOI policy, the cost and benefit from GM Khas & JJ land conversion has to be estimated. This chapter covers the cost benefit analysis of GSS AT Chatra.

1.1 Overall Approch & Methodology

The Cost benefit analysis has been carried out by analysis the revenue generated by the Sub-station that will be established in the converted land against the expense /cost incurred in the conversion process.

1.2 Revenue Generation

The revenue from the converted land

Power Flow: 80MW

Load Factor: 0.90

Losses: 0.85%

Average Value Added: Rs 3.71 per KWh

Energy sent out per year: $80*10^6*0.9*8760*0.976=615.582*10^6$ KWh

Value Added: $615.582*10^6*3.71=$**Rs 228.38 crores**

1.3 Cost Incurred

The details of the cost incurred while converting the Non-forest land i.e GM Khas/JJ for set up 132/33Kv Grid Sub-station are given in the following paragraphs.

(a) Project Investment :The capital outlay incurred for the development
is estimated = **Rs.35.47 crores**

(b) Land Cost: JUSNL has to pay Govt./Forest Deptt: **NIL**

(c) Cost on Afforestation: **NIL**

(d) Foregone Revenue from the forest land: **NIL**

2.0 Benefit To Economy

The power will be transmitted to the nearby PSS through 33Kv Voltage level. This project will provide sustained and incessant supply of power to Chatra district and nearby area.

3.0 No. of population benefited:

Assuming average of 10 unit's consumption per day per household, a total of 1.04 million household can be provided electricity per year.

4.0 Employment Potential: The project will employ an average of 100 labours with an average of 100days in a year for 2 years

Therefore,

Total man days generated = 100*100*2= 20000

Value of man days generated = 20000*300= 0.6 crores

5.0 Cost of Acquisition of facility on non forest land i.e GM Khas/ JJ:

NPV for GM Khas/JJ LAND having trees/JJ= 8.03 LAKH per Hectare

5.1 Area of Standing trees on demarcated GM Khas/JJ LAND=0.3 Ha

5.2 Loss of Trees/JJ (timber,fuel wood.etc) on GM Khas/JJ LAND =

0.3*8.03= 2.409 Lakhs = **0.024 crore**

5.3 Loss of soil Erosion: NIL

6.0 Loss of Agriculture: NIL

7.0 Cost of Rehabilitation the displaced persons as different from compensatory amounts given for displacement: NIL

8.0 Cost of supply of free fuel wood to workers residing in or near forest area during the period of Construction - NIL

For purpose of cost benefit analysis:

(a)The total cost (In crore) = 0.6+0.024= 0.624 Cr

(b) The value of benefit (In crore) = Rs 228.38 crores

Hence,

Cost Benefit Ratio= 0.64/228.38= 1/357

Thus, construction of 132/33Kv Grid Sub-Station At Darha Village, Distt.-Chatra would be advantageous in monetary terms.

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