

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)



पू.क्षे.पा.प्र.-1, C-09, जे.सी.पी. ग्रुप कार्यालय, 400/220 केवी उपकेन्द्र, (जमशेदपुर), रामचन्द्रपुर, गम्हरिया, सराइकेला, झारखण्ड - 832108
ERTS-1, C-09, JCP, Group Office, 400/220 kV Substation (Jamshedpur), Ramchandrapur, Gamharia, Seraikela, JH-832108
Phone: 0657-2944265, E-Mail: jcptatanagar@gmail.com

ANNEXURE

COST BENEFIT ANALYSIS

132 kV D/C SIMDEGA-MANOHARPUR TRANSMISSION LINE

EVALUATION OF BENEFITS:

1. Increase in productivity attributable to the specific project:

Power Flow	=	2X75 MVA
Load Factor	=	60%
Power Factor	=	0.8
Losses	=	2.5%
Average Value Added	=	Rs.6.00 per kwh
Energy sent out per year	=	$2 \times 75 \times 10^3 \times 0.6 \times 0.8 \times 0.975 \times (365 \times 24)$ kwh
	=	614952000 kwh (unit)
Value added	=	Rs. 3689712000
	=	Rs. 369 crore / year

2. Benefits to economy:

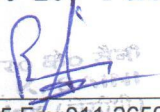
The 2500MW Power (share of Jharkhand State) to be Generated from the Power plants of Private Sectors will be transmitted through 20 Nos. of 400/230/132/33KV Transmission lines including this 132KV D/C Simdega-Manoharpur Tr. Line being constructed by POWERGRID for JUSNL under implementation of 400/230/132/33KV Transmission system for Jharkhand State. This project will provide sustained and incessant supply of power to Jharkhand State which will be utilized by large and SMEs industries leading to increased industrial output in Jharkhand State which in turn will lead to increase in GDP of India.

3. No. of population benefitted:

Assuming average 10 units consumption per day per household.
Total of around 61495200 households can be provided electricity per year.

4. Employment potential during construction:

The project will employ an average of 200 labours with an average of 200 days of work in an year for 1.25 years (15 Months) during construction.
Therefore, total man-days generated = $200 \times 200 \times 1.25 = 50000$.
Value of mandays generated assuming the labour cost of Rs. 200/manday = $50000 \times 200 = 1$ crore.


MANAGER (JCP)
पावरग्रिड कारपोरेशन लिमिटेड

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5. Cost of Acquisition of facility on non-forest land wherever feasible:

Nil

(a) Loss of Agriculture

Nil

(b) Animal husbandry production due to diversion of forest land

Nil

6. Cost of rehabilitating the displaced persons as different from compensatory amounts given for displacement.

Nil

7. Cost of supply of free fuel-wood to workers residing in or near forest area during the period of construction.

Nil

EVALUATION OF LOSS OF FORESTS

I. Loss of value of timber, fuelwood 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 these commodities:

Only one time loss of vegetation occurs during construction and there is no loss of man-hours. Considering the NPV of 8.04 lakhs per hectare, the total loss of timber, fuelwood and minor forest produce for 26.814 hectares of forest may be calculated as $26.814 \times 8.04 = 215.58$ lacs (say 2.16 crore)

II. Loss of animal husbandry productivity, including loss of fodder.


Nil

III. Cost of human resettlement.

Nil

IV. Loss of public facilities and administrative infrastructure:

Nil


R. K. SAINI
मैनेजर (ग्रुप)
MANAGER (JCP)

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V. Losses due to soil erosion/effect on hydrological cycle/wildlife habitat etc.

In the present case total forest involvement is 26.814 ha. Assuming the value of 01 Ha. of fully stocked forest (density 1.0) as 126.74 lakhs, to accrue over a period of 50 years.

Total value of forest

$$\begin{aligned} &= 26.814 \times \text{Rs.} 126.74 \text{ lakhs} \\ &= \text{Rs.} 3398.40 \text{ lakhs} \\ &= \text{Say Rs.} 34 \text{ crores.} \end{aligned}$$


For the purpose of cost benefit analysis

The total cost= (I)+(V)= 2.16 + 34 = 36.16 crores.

The total value of benefits= (1)+(4) = 369+1.0= 370 crores.

Hence Cost: Benefit Ratio = 36.16 crores : 370 crores
= 1 : 10.23
Say 1: 10

Thus the construction of 132 KV D/C Simdega-Manoharpur Tr. line would be advantageous in monetary terms.


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