

UTTAR PRADESH POWER TRANSMISSION CORPORATION LIMITED


PROTECTED FOREST LAND PROPOSED TO BE DIVERTED FOR 400 KV ANPARA VARANASI DC TRANSMISSION LINE THROUGH FOREST DIVISION MIRZAPUR, SONBHADRA, OBRA, RENUKOOT AND KAIMUR WILDLIFE IN DISTRICT: SONBHADRA & MIRZAPUR IN THE STATE OF U.P.

COST BENEFIT ANALYSIS

Purpose: This cost benefit analysis is being undertaken for proposed diversion of forest Land being affected due to construction of access controlled.

(a) Parameters for Evaluation of the loss of Forests

1.	Ecosystem Services losses due to Proposed forest diversion	<p>Economic Value of Ecosystem services due to diversion of forest = Proposed Forest area x NPV Rate per Ha Net Present Value (NPV) rates for forest land of Eco-class III (density range: 0.0 to < 0.4) = 6,26,000/- per Ha.</p> <p>Therefore, division wise ecosystem services losses due to proposed diversion of forest land are as follows:</p> <table><tr><th>Division</th><th>Propose Forest Area (ha)</th><th>Density</th><th>NPV Rate</th><th>Ecosystem services Losses in INR.</th></tr><tr><td>Renukoot</td><td>98.28</td><td>0.3</td><td>626000/</td><td>61523280.0/-</td></tr><tr><td>Obra</td><td>113.048</td><td>0.3</td><td>626000/</td><td>70768048.0/-</td></tr><tr><td>Kaimur</td><td>54.652</td><td>0.1</td><td>626000/</td><td>34212152.0/-</td></tr><tr><td>Sonbhadra</td><td>15.79</td><td>0.1</td><td>626000/</td><td>9884540.0/-</td></tr><tr><td>Mirzapur</td><td>37.51</td><td>0.3</td><td>626000/</td><td>23481260.0/-</td></tr><tr><td>Total</td><td>319.28</td><td></td><td></td><td>199869280.0/-</td></tr></table> <p>No Trees and No livelihood of people will be affected due to proposed diversion of forest land.</p>	Division	Propose Forest Area (ha)	Density	NPV Rate	Ecosystem services Losses in INR.	Renukoot	98.28	0.3	626000/	61523280.0/-	Obra	113.048	0.3	626000/	70768048.0/-	Kaimur	54.652	0.1	626000/	34212152.0/-	Sonbhadra	15.79	0.1	626000/	9884540.0/-	Mirzapur	37.51	0.3	626000/	23481260.0/-	Total	319.28			199869280.0/-
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2.	Loss of animal husbandry, productivity including loss of fodder	Nil																																			
3.	Cost of human resettlement	Nil																																			
4.	Loss of public facilities and administrative infrastructure (roads, buildings, schools, dispensaries, electric lines, railways etc) on forest land or which would require forest land if these facilities were diverted due to the Project.	There are no Public facilities and administrative infrastructure (roads buildings, schools, dispensaries, electric lines, railway etc.) on proposed diverted forest land.																																			
5.	Environmental losses (soil erosion, effect on hydrological cycle, wild life habitat, microclimatic upsetting of ecological balance)	<p>As per Forest (Conservation) Act, 1980 the environmental loss for a 50 years period for the density of 1.0 is INR 126.74 Lacs per hectare. The division wise environment loss is as follows:-</p> <table><tr><th>Division</th><th>Proposed Forest Area (ha)</th><th>Density</th><th>Environment Loss in INR.</th></tr><tr><td>Renukoot</td><td>98.28</td><td>0.3</td><td>373680216.0/-</td></tr><tr><td>Obra</td><td>113.048</td><td>0.3</td><td>429831105.60/-</td></tr><tr><td>Kaimur</td><td>54.652</td><td>0.1</td><td>69265944.80/-</td></tr></table>	Division	Proposed Forest Area (ha)	Density	Environment Loss in INR.	Renukoot	98.28	0.3	373680216.0/-	Obra	113.048	0.3	429831105.60/-	Kaimur	54.652	0.1	69265944.80/-																			
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अधिसारी अभियन्ता
जिला विकास समिति

(एस० के० सिंह)

अधिसारी अभियन्ता
विद्युत प्रेषण खण्ड

उत्तर प्रदेश पावर ट्रांसमिशन कॉर्पोरेशन लिमिटेड
गान्धीपुर

		Sonbhadra	15.79	0.1	20012246.0/-
		Mirzapur	37.51	0.3	142620522.0/-
		Total	319.28		1035410034.40/-
		Hence, total environmental loss for the project is 10354.10 Lakhs.			
6.	Possession value of forest land	30% of environment costs due to loss of forests = 30% x 1035410034.40/- = 310623010.32/-			
7	Suffering to outsiders	Nil			

Therefore, Current Environment Net loss

= 199869280.0 (Ecosystem Losses) + 1035410034.40 (Environmental Loss) + 310623010.32 (Possession Value of forest land) = INR 1545902324.72/-

Expenditure for development and maintenance of the project for 15 years

= Cost of Project + Renewal cost of BC for two cycle
= INR 431462000.00 + 215731000.00 = INR 647193000.00/-

Net Total Losses/Cost = INR 1545902324.72 + 647193000.00
= INR 2193095324.72/-

(b) Parameters for evaluation of Benefit Not withstanding Loss

S. No	Parameter	Description
1	Increase in productivity attributable to the specific Project	In Lieu of total area to be affected in forest land it is proposed to undertake at least twice of the affected trees as compensatory afforestation as per Forest (Conservation) Act, 1980. Since, due to the current project there is no felling of trees to so there are no trees to be planted as per compensatory afforestation. The ecological value for a 50 years period of density of 1.0 is 126.74lac per hectare. By considering the min 0.5 density the ecological gain for this project would be INR 4046554720.00/-.
2	Benefits to economy due to specific project	Socio economic benefits due to the transmission line project include: 1- It will increase the transfer capability between two newly connected points 2-It will make indirect impact on transfer capabilities, leading to changes in patterns of flow and congestion 3-Overall enhancement of socio-economic condition of the area along the project corridor. The overall mission is to increase the GDP of the said region and make it comparable with the nation GDP.
3	No. of population benefited due to specific project	The average Population of 500000 People from district Varanasi, Sonbhadra and Mirzapur will be benefited directly or indirectly.
4	Economic benefit due to direct and indirect Employment Potential	Approximately 200 man days of permanent employment and 100 man days of temporary employment will be generated due to the Project.

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अविश्वसी अभियन्ता

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गान्धी

Economic benefit
due to specific
Project

The benefit of Economy shown in table below

Project Details	Increasing Rate of Cost year	Project cost after 50 Years	Current Cost Involve in Construction of Project	Net Profit in 50year
Protected Forest Land Proposed to be diverted for 400 KV Anpara-Varanasi DC Transmission Line passing through Forest Division Mirzapur, Sonbhadra, Odra, Renukoot and Kaimur	8%	21573.1 Lac	4314.62 Lac	17258.48 Lac

So benefit of economy in 50 years = **17258** Lac.

On an average GDP will increase @4% (172.5848/4365.36) current GDP of Sonbhadra. Saving due to less consumption of fuel and fatalities=10crore

Total NPV of the project = 206508550.0/-

The result of economic evaluation show that the proposed development of project is economically viable with EIRR 13.11%

Therefore Project Benefit

= 4046554720.00 (Ecological gain) + 1725848000.00 (Economic gain) + 100000000.00 (Savings) + 206508550.0 (NPV)

Net Profit = INR 6078911270.00/-

Therefore Benefit cost ratio = **6078911270.00/2193095324.72**
= 2.77

प्रतिष्ठाक्षरित
प्रभागीय वनधिकारी
ओबरा वन प्रभाग
ओबरा-सोनभद्र

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गाजीपुर