

COST BENEFIT ANALYSIS

(In accordance with MoEF &CC Guideline dated 1.08.2017)

COST BENEFIT ANALYSIS FOR FOREST DIVERSION OF 109.689
HECTARES AREA for Implementation of Navsari (New) (South Gujarat)
(GIS) - Padghe (GIS) 765 kV D/c transmission line

(As per guidelines dated 17/01/2022 issued by MoEF&CC, Govt. of India)

Table A :- Category of proposals for which Cost Benefit Analysis are applicable in Implementation of Navsari (New) (South Gujarat) (GIS) - Padghe (GIS) 765 kV D/c transmission line At Navsari & Valsad District Forest Division of Gujarat			
SI No	Nature of Proposal	Applicable / Not Applicable	Remarks
1	All categories of Proposals involving forest land up to 17.27 hectares in plains and up to 90 hectares in hills	Not Applicable	Nil
2	Proposal for defense installation purposes and oil prospecting (prospecting only)	Not Applicable	Nil
3	Habitation, establishment of industrial units, tourist lodges / complex and other building construction	Not Applicable	Nil
4	All other proposals involving forest land more than 17.27 hectares in plain and more than 90 hectares in hills including roads, transmission lines, minor medium and major irrigation projects, hydel projects, mining activities, railway lines, location specific installation like Micro-wave stations , Auto repeater center, TV towers etc.	Applicable	These are cases where a Cost Benefit Analysis is necessary to determine when diverting the forest land to non- forest use is in the overall public interest.

WR-II , Navsari GIS 400/220KV substation,Village -Dastan, Tal.-Palsana , Dist - Surat, Gujarat -394 310

GST No 24AAACP0252G1ZZ/ email id -Navsariss@powergrid.net

क्षेत्रीय मुख्यालय : प्लॉट नं.-54, रिया-रेवती रिजॉर्ट के पास, समा-सावली रोड, वडोदरा - 390 008(गुजरात) -
Regional Head Office : Plot no.-54, Adjacent to Riya-Revati Resort Sama-Savli Road, Vadodara – 390 008(Gujarat)

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Table B :- Estimation of cost of forest diversion

SI No.	Parameters	Cost in Cr. Rs.	Remarks
1	Ecosystem services losses due	8.8080	Economic value of loss of eco- system services due to diversion of forests shall be the net present value (NPV) of the forest land being diverted (109.689 Ha) as prescribed by the MoEF&CC, Govt. of India -(8.03 lacsX109.689 Ha)
2	Loss of Animal Husbandry	0.8808	<p>a. As per calculation, loss of animal husbandry productivity including loss of fodder is Rs. 0.8808 Crores</p> <p>b. Estimated Quantity of fodder / grass = Average production fodder / grasses in MT X Area Applied (based on the assumption that on closer an area is capable of yielding an average 2 to 4 MT of grass per Ha (MT) :- 3 MT X 109.689 = 329.067 MT.</p> <p>c. Value of fodder = Estimated quantity X Market Rate = 329.067 MT X Rs. 4500/MT = 0.1481Cr.</p> <p>d. Considered 10% of NPV which is maximum : Rs. 0.8808 Cr.</p>
3	Cost of Human resettlement	Nil	There is no human resettlement in proposed Forest Land.

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4	Loss of public facilities and administrative infrastructures (Roads, Buildings, Schools, Dispensaries, Electric lines, Railways etc.) on forest land , which would require forest land if these facilities were diverted due to the project.	Nil	No loss of public facilities due to Project.
5	Possession value of Forest Land diverted	17.521/-	<p>a. Circle rate of adjoining area in the district as a cost component as possession value of forest land is arrived as Rs. 7.99 lakhs / Ha X 109.689 Ha X 2 = Rs. 17.521/- Crore.</p> <p>b. 30% of environmental costs (NPV) due to loss of Forest (8.8080 x 30% = Rs. 2.6424 Cr.</p> <p>Higher of the two values is 17.521 Cr</p>
6	Cost of suffering of Oustees	Nil	No human habitation exist on forest land proposed to be diverted.
7	Habitat Fragmentation cost	4.404/-	The cost due to fragmentation has been determined as 50% of NPV , as per Standard Industry Practice, which is 4.404 Cr.
8	Compensatory afforestation and soil & moisture conservation cost	21.901 /-	<p>Cost of compensatory afforestation is Rs. 7.99 lac/Ha ie 17.521 Cr. Soil & moisture conservation cost@ 25% of CA cost=4.380 Cr</p> <p>Total cost of CA and Soil & moisture=21.901 Crore</p>
Total Loss against the proposed forest land diversion = Rs.53.5158 /- Cr.			

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Table – B1 – Project Cost Estimates

Particulars	Value in Crores	Remarks
Capital investment including preoperative expenses	895/-	Total Project cost
R&R Cost	Nil	There is no human resettlement in proposed Forest Land
Cost of Public facilities including administrative cost	Nil	Cost included diversion of HT lines , RERC Lines , Roads etc.
Net present value (NPV) payable to Forest Dept. for total forest land of 109.689 hectares	Nil	Cost included in the Project Cost
Cost of Compensatory Afforestation payable to Forest Dept. The cost of Afforestation on revenue forest land – 109.689 Hectares	Nil	Cost included in the Project Cost
Total Project Cost = 895/- Cr		

Table C :- Estimation of benefits from Forest diversion

Sl.No.	Head	Quantity	Unit Rates in Rupees	Total benefits (Rs in Crores)
1	Value of Power transmitted in life of 50 years (4000 MW X 365 days X 24 Hrs X 50 years)X1000	12,26,40,00,00,000.00	2.00	2,45,280.00
2	Employment generated during construction for a period of 01 years (330x1x200)	62,600.00	Rs 569 per man days	3.56
3	Employment generated during operational life of 50 years (365x50x15)	2,73,750.00	Rs 569 per man days	15.58
4	Development of industries Agriculture and other fields in 50 years	Lump-Sum 5 times of transmitted power		12,26,400.00
	Total Benefit in Crores Rupees			14,71,699.14
	Total Benefit per annum in Crores			42,048.55

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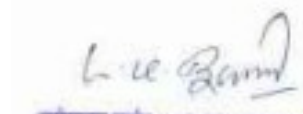
D. Calculation of Cost Benefit Ratio :-

Total Benefits as per Table C : = **Rs. 42,048.55 Crores**

Total Cost as per Table B and B1 = Losses of Forest + Cost of the Project :
= Rs. 53.515 + Rs.895 = **Rs 948.515 Crores**

Hence Benefit / Cost Ratio = 44.331

Thus the project gives positive Benefit / Cost Ratio. The monetary returns of the Project are positive over the environmental losses.



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