



ISO 9001, 14001 &
OHSAS 18001


नॉर्थ ईस्टर्न ईलैक्ट्रिक पावर कॉरपोरेशन लि.
(भारत सरकार का उपक्रम)

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A GOVT. OF INDIA ENTERPRISE)
ENVIRONMENT & RR WING

CORPORATE IDENTITY NUMBER (CIN): U40101ML1976GOI001658

TO WHOM IT MAY CONCERN

Cost-Benefit Analysis for Mawphu Hydro Electric Project, Stage-II, (75 MW), Meghalaya, is given as follows in Annexures VI and VII.


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Annexure VI


Project Developer: North Eastern Electric Power Corporation Ltd.
Project: Mawphu HEP, Stage-II (75 MW)
Dist: East Khasi Hills, Meghalaya

Cost - Benefit Analysis Parameter for Evaluation of Loss of Forests

SL No.	PARAMETER	HYDEL PROJECT	Remarks
1	Loss of Value of timber, fuel wood and minor forest produce of annual basis, including loss of man-hours of people who derived livelihood & wages from the harvest of these commodities.	The detail enumeration of the forest produce has been done by the DFO, East Khasi Hills Forest Division and 4004 Nos of trees and poles and other forests produces are likely to be affected in the diverted forest land and for which the crop compensation amounts to Rs. 15,88,428/- = Rs.1.59 millions	However, it is assured that the removals of the forest produce/ felling of trees / poles would be minimum only and where it is very much required.
2	Loss of Animal husbandry productivity inclusive of loss of fodder	-	However, Afforestation and other conservation measures would be taken up.
3	Cost of human resettlement	-	There is no displacement or any oustee involved in the project & hence cost of resettlement is not applicable.
4	Loss of Public facilities & administration infrastructure of forest land or which would require forest land if facilities were diverted due to the project.	-	No public facilities or administrative infrastructure is lost due to the acquisition of the forest land.

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SL No.	PARAMETER	HYDEL PROJECT	
5	Environmental Losses (Soil erosion, wild life, habitant, effect on hydrological cycle, microclimate upsetting of ecological balance).	<p>The environmental value of 22 Ha of forest (Density 0.8) at the rate of Rs 126.74 Lakhs per Ha (Density 1) accrue over a period of 50 years = Rs. 2230.624 Lakhs = Rs. 223.06 millions Total= Rs. 224.65 millions</p> <p>Benefits: (Income – Project Cost)</p> <p><i>Income</i> = Annual Energy generation (Million Units) x Rate per Unit Energy x 50 Yrs. = Rs. 291.62 x 6.19 x 50 Millions = Rs. 90256.39 million</p> <p><i>Project Cost</i> = Rs. 8798.30 millions</p> <p>Benefits = Rs. 90256.39 millions - Rs. 8798.30 millions = Rs.81458.09 millions</p> <p>Therefore, Benefit Cost Ratio =Rs.81458.09 millions / Rs. 224.65 millions = 362.6 > 1.</p>	
6	Suffering to Oustees	-	As indicated at item no.3.


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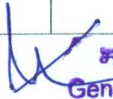
Project Developer: North Eastern Electric Power Corporation Ltd.
 Project: Mawphu HEP, Stage-II (75 MW)
 Dist: East Khasi Hills, Meghalaya

Parameter For Evaluation Of Benefit, Notwithstanding With Loss Of Forests


Sl. NO.	PARAMETER	HYDEL PROJECT	Remarks
1	Increase in productivity attributed to the specific project.	Mawphu H.E. Project, Stage-II would annually generate about 291.62 Million Units (MU) of hydro power. Total generation 291.62 MU per yr X 50 yrs = 14581 MU. Power worth 14581 MU X Rs. 6.19/unit = Rs. 90256.39 Million would be generated over a period of 50 yrs and hence there would be direct benefit to the State and the Nation.	
2	Benefits to economy.	The State Govt. would get free power @ 12% per year of power generated from this project during the entire Operation period of 50 years. The State Govt. will have the first preference to purchase power that is generated from this project. In addition to above, Project Developer would also contribute @1% of power generated towards the Local Area Development Fund during 50 years. Thus total free energy revenue to the Meghalaya in operation phase of 50 years will be to the tune of about 37.91 MU x Rs. 6.19/unit x 50 = Rs. 11733.15 Million Further, free power @ 100 units / month shall be provided to each PAF for 10 years from the date of commissioning= 74 x 100 x 12 x 10 x Rs.6.19/unit = Rs. 5.497 million With the commissioning of this project, power scenario of the state will be considerably improved which will attract entrepreneurs/ industrialists to set up various industries and production units in the State. Thus, commissioning of this project is bound to boost the overall economy of the State in particular and the nation in general.	

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3	Number of population benefited.	The project will benefit the population served by Eastern Region Grid																																											
4	Employment potential.	<p>Employment potential: The project will provide employment as given below:</p> <p>Labour:</p> <table><tr><td>Year</td><td>No.</td><td>Manmonths</td></tr><tr><td>Year I</td><td>600</td><td>7200</td></tr><tr><td>Year II</td><td>800</td><td>9600</td></tr><tr><td>Year III</td><td>800</td><td>9600</td></tr><tr><td>Year IV</td><td>800</td><td>9600</td></tr><tr><td>Year V</td><td>800</td><td>9600</td></tr><tr><td>Total</td><td></td><td>45600 manmonths</td></tr></table> <p>Salary: (45600 manmonths @ Rs. 5000/manmonth)=Rs. 228 million</p> <p>Executives:</p> <table><tr><td>Year</td><td>No.</td><td>Manmonths</td></tr><tr><td>Year I</td><td>150</td><td>1800</td></tr><tr><td>Year II</td><td>200</td><td>2400</td></tr><tr><td>Year III</td><td>200</td><td>2400</td></tr><tr><td>Year IV</td><td>200</td><td>2400</td></tr><tr><td>Year V</td><td>200</td><td>2400</td></tr><tr><td>Total</td><td></td><td>11400 manmonths</td></tr></table> <p>Salary: (11400 manmonths @ Rs. 20000/manmonth)=Rs. 228 million</p> <p>Total=Rs.456 million</p>	Year	No.	Manmonths	Year I	600	7200	Year II	800	9600	Year III	800	9600	Year IV	800	9600	Year V	800	9600	Total		45600 manmonths	Year	No.	Manmonths	Year I	150	1800	Year II	200	2400	Year III	200	2400	Year IV	200	2400	Year V	200	2400	Total		11400 manmonths	
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5	Cost of acquisition facility on non-forest land wherever feasible.	-																																											
6	Loss of (a) Agriculture & (b) Animal Husbandry production due to diversion of forest land.	-																																											


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Sl. NO.	PARAMETER	HYDEL PROJECT	
7	Cost of rehabilitating the displaced persons as different from compensatory amounts given for displacement.	-	As indicated at item no.3 at Annexure-VI.
8	Cost of Supply of free fuel wood to workers residing in or near forest area during period of construction.	-	Wood will not be used as the fuel, instead community kitchens using LPG or Kerosene will be provided as part of the project cost.


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