

**A Project
On
Multi-tier Strip Plantation**

**Under The Proposed construction of 220 KV
D/C Transmission Line from Umred to
Nagbhid**

**Executive Engineer
EHV Project Division – I
MSETCL, Nagpur**


Executive Engineer
EHV Projects Division-I
MSETCL, Nagpur,


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

INDEX

	Particulars	Page No.
1.	Introduction	1
2.	Justification	1
3.	Objectives	1
4.	Methodology	2
5.	Components	2
6.	Site Developments	2
7.	Post Care	2
8.	Benefits	3
9.	Implementing Agency	3
10.	Evaluation	3
11.	Details of Proposed Forest Area	4
12.	Model for Multi-tier Strip Plantation	5
13.	Estimate of Cost Per Unit (400 Meters by the Strip)	6-8
14.	Suggested Plant species for plantation	9


Executive Engineer
EHY Projects Division-I
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

**Multi-tier Strip Plantation under the Proposed 220 KV D/C Umred
to Nagbhid Transmission Line of MSETCL**

1. INTRODUCTION:-

With increasing priority of the state Government, keeping in view the consistent to extend electricity facility to both rural & urban area either through Transmission Grids or load generation units, the proposed 220 KV D/C High Voltage Transmission line is a step in this direction by the MSETCL. A part of this Transmission Line would pass through the forest area of Nagbhid & Chimur Range of Bramhapuri Forest Division of Chandrapur district in Maharashtra State. The total forest area to be affected under this project is 2.998 Ha.

2. JUSTIFICATION :-

The proposal of taking up strip plantation of suitable dwarf plant species under the high tension electric lines in 3 meters width justifies this concern. The rationale behind this entire effort is to utilize the affected areas maximally for raising green cover with species that are non browsable, hardy, easy to grow, require little care and maintenance. Also their height would be such as to not interfere with the smooth transmission of electricity through the proposed construction of transmission lines. Efforts would be made to plant species in multi-tier such that benefits can be accrued throughout the year, ensuring maximum survival, growth and returns therefrom.

3. OBJECTIVES :-

1. Awareness generation regarding the need to maintain the biodiversity of the region with alternative plantation schemes, when there is diversion of forest lands for non – forestry purposes.


Executive Engineer
EHV Projects Division-1
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

2. Plantation and providing post plantation care and protection for proper establishment of the planting materials so that local communities may reap benefits from this.

4. METHODOLOGY:-

Tree species will be planted near the towers of an interval of 4 meters in the central portion of planting strip up to 60 meters. The shrub species will be planted at 2 meters distance on the both ends of the planting strip, herbs will be planted/sown all along the line as under storey. Climbers will be planted alongside the trees for support in the second/or third year of the project. Only healthy and vigorous planting material would be planted.

5. COMPORNENTS:-

Cultivation of plant species would be taken up in a width of 3m spanning the total length of 835 meters. Thus, the total area would be 0.2505 ha. Under which multi-tier strip plantation would be taken up. The strips have been divided into technically manageable units of 350 meters each to make it more viable, implement able and accountable too.

6. SITE DEVELOPMENT:-

Before taking up the proposed plantation, the entire identified site needs to be property demarcated, cleared and cleaned. Apart from this, since some of the small sized trees species have been selected for plantation accordingly pits would have to be dug, land tilled and ridge prepared.

7. POST CARE:-

The success of any project depends on adherence to all the project components properly. In plantation related activities such as this, post plantation care and maintenance forms an integral part of the entire exercise. As a result, for nine years, subsequent from the year of establishment of plants.


Executive Engineer
EHV Projects Division-1
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

3

protection in the form of watch & ward, mulching, maintenance of live hedge etc. would have to be taken care of.

8. BENEFITS:-

Families, whether land holders or landless, would be eligible to get employment under the project. Through the various activities of the project a total employment close to 108 Man-days will be generated. The villages will receive a variety of direct and indirect economic benefits from the project. Thus the overall rural economy will be strengthened. Plantation of plant species in the affected areas will result in increasing the biodiversity of the area along with checking of the soil erosion and subsequent loss of valuable soil cover from the forest areas.

9. IMPLEMENTING AGENCY:-

The scheme will be implemented by Dy. Conservator of Forests, Bramhapuri Forest Division, Bramhapuri.

10. EVALUATION:-

The evaluation of the scheme will be done by the Evaluation Unit of Forest Department of M. S.

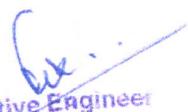

Executive Engineer
EHV Projects Division-I
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

4

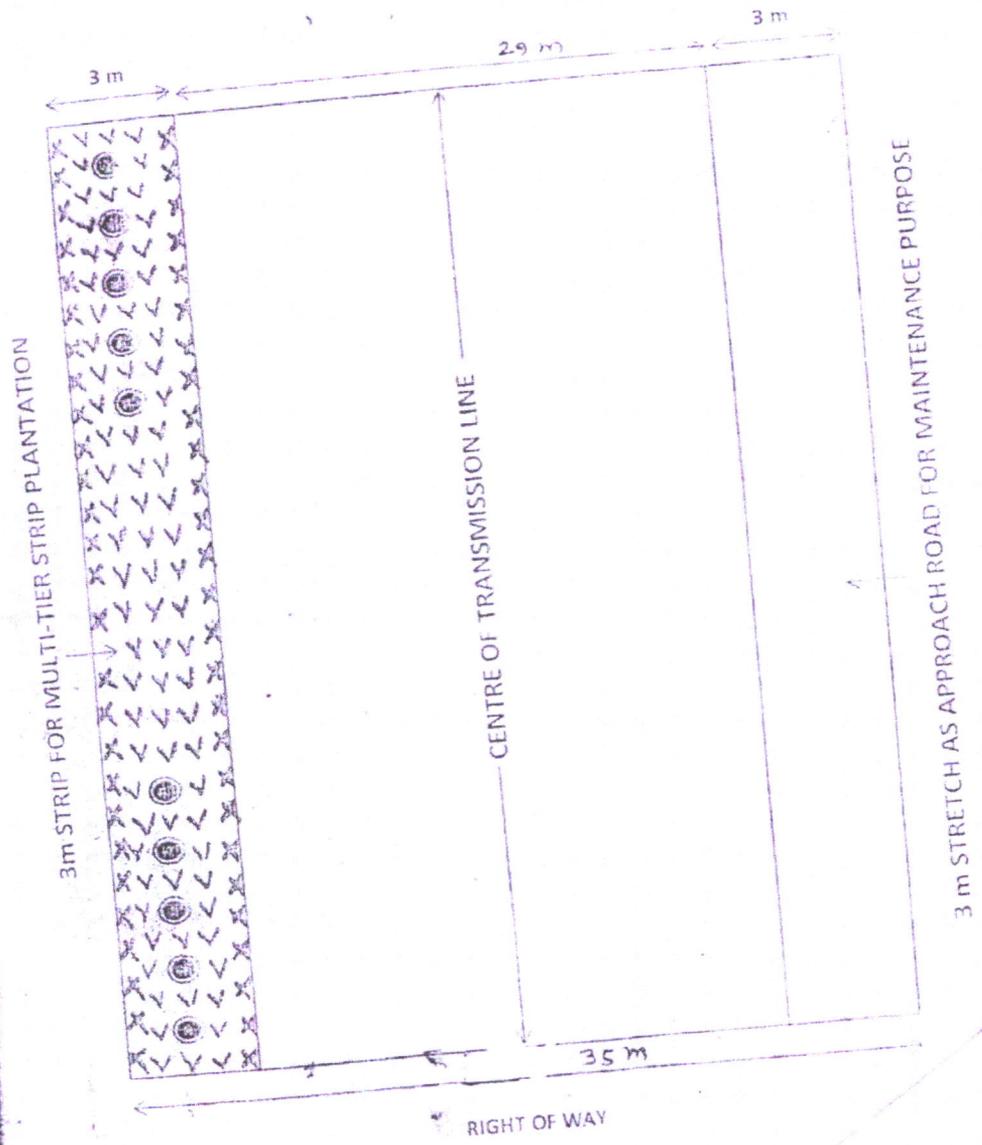
**Details of Proposed forest area for 220 KV D/C
Transmission Line from Umred to Nagbhid**

Sr. No.	Forest Range	Name of villages	Compt. No/Sur. No.	Length in meter	Width in meter	Area (in ha.)
1.	Chimur	Sathgaon	384	7.180	35	0.025
2.	Nagbhid	Kanpa	241	22.712	35	0.079
3.	Nagbhid	Kanpa	242	24.191	35	0.085
4.	Nagbhid	Kanpa	262	418.605	35	1.465
5.	Nagbhid	Bikli	278	217.100	35	0.760
6.	Nagbhid	Bikli	35	151.969	35	0.532
7.	Nagbhid	Bikli	296	6.994	35	0.024
8.	Nagbhid	Mohali mokasa	21	7.714	35	0.027
Total -				835		2.998


Executive Engineer
SHV Projects Division-I
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

SUGGESTED MODEL FOR MULTI-TIER STRIP PLANTATION
(NOT FOR SCALE)



INDEX	
☉	DWARF TREE
V	HERB
X	SHRUB

Executive Engineer
EHV Projects Division-I
MSETCL, Nagpur.

Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapur

220 K.V. UMRED TO NAGBHID EHV TRANSMISSION LINE

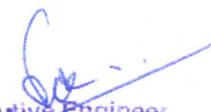
Estimate of cost per unit (350 meters length strip)

(Unit is the area in between two erected towers)

Daily wages rate Rs. 405/-

Location - Village Kanpa & Bikali -Gat No 241,242,
262, 278 & 35 (Total Area (835Mt. X 3Mt.) = 0.2505
Ha.)

Sr.No.	Particulars of work	Expenditure per ha.			
		M.D.	Wages	Material supply	Total
1	2	3	4	5	6
	PRE PLANTING OPERATION				
1	Survey & Demarcation	1.00	405.00	0.00	405.00
2	Preparation of treatment map	1.00	405.00	200.00	605.00
3	Clening of unwanted shrub for clear of site	2.00	810.00		810.00
4	Digging of pits for tree species size (45cmX45cm) 30 pits/unit	2.00	810.00	150.00	960.00
5	Digging of pits shrub species (30cmX30cm) 350 pits/unit	12.60	5166.00	0.00	5166.00
6	Ploughung the area of 350mX3m) 1050 Sq m i.e. 0.105 ha	2.00	810.00	0.00	810.00
7	Nursery cost	0.00	1800.00	1200.00	3000.00
	i) Tree @ 60/- per plant for 30 plants				
	ii) Shrub @ 15/- per plant for 350 plants	0.00	5250.00	2650.00	7900.00
	iii) Agave as live hedge @ 2/- per plant for 943 plants	0.00	1886.00	1257.00	3143.00
	iv) Purchase of seed of herbs 500 gms/unit	0.00	0.00	2500.00	2500.00
	Total	20.60	17342.00	7957.00	25299.00
	Contingency 3%				758.97
	Labour welfare 4%				1011.96
	Grand Total				27069.93
	1st YEAR OPERATION				
1	Filling of pits (Tree species) 30 Pits	1.00	405.00	0.00	405.00
2	Filling of pits (Shrub species) 350 Pits	3.00	1215.00	0.00	1215.00
3	Planting of seedlings (516 plants including casualty)	6.00	2430.00	0.00	2430.00
4	Seed sowing of herb species per unit	2.00	810.00	0.00	810.00
5	Planting of agave suckers 943 plants	11.00	4455.00	0.00	4455.00
6	Three weeding with soil mulching (516 plants)	27.52	11146.00	1225.00	12371.00
7	Watch & ward L.S.		3000.00	0.00	3000.00
8	Cost of insecticide & application.	1.00	405.00	0.00	405.00
	Total	51.52	23866.00	1225.00	25091.00
	Contingency 3%				752.73
	Labour welfare 4%				1003.64


Executive Engineer
EHV Projects Division-I
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

Sr.No.	Particulars of work	Expenditure per ha.			
		M.D.	Wages	Material supply	Total
1	2	3	4	5	6
	Grand Total				26847.37
2nd YEAR OPERATION					
1	Resowing of seed including cost of seed	1.00	405.00	1000.00	1405.00
2	Casualty replacement (52 plants) 10% per plants @ 10/- including raising of plants.	1.00 0.00	405.00 0.00	500.00 520.00	905.00 520.00
3	Weeding two times with soil mulching (516 plants)	18.57	7520.85	0.00	7520.85
4	Watch & ward L.S.		3000.00	0.00	3000.00
	Total	20.57	11330.85	2020.00	13350.85
	Contingency 3%				400.53
	Labour welfare 4%				534.03
	Grand Total				14285.41
3rd YEAR OPERATION					
1	One Weeding with soil mulching (516 plants)	13.76	5572.80	0.00	5572.80
2	Watch & ward L.S.		3000.00	0.00	3000.00
	Total	13.76	8572.80	0.00	8572.80
	Contingency 3%				257.18
	Labour welfare 4%				342.91
	Grand Total				9172.90
4th to 10 th YEAR OPERATION					
1	Watch & ward for 12 months L.S.	0.00	21000.00	0.00	21000.00
2	Fire tracing	10.00	4050.00	0.00	4050.00
	Total	10.00	25050.00	0.00	25050.00
	Contingency 3%				751.50
	Labour welfare 4%				1002.00
	Grand Total				26803.50
	All Grand Total				104179.11

S. No.	Particulars of Works	Mandavs Creation	Amount to spend (Rs.)
1	2	3	4
1	PPO + PYO Works	22.40	27069.93
2	First year Operation	51.52	26847.37
3	Second Year Operation	20.57	14285.41
4	Third Year Operation	13.76	9172.90
5	Fourth Year Operation	0.00	26803.50
	Total-	108.25	104179.11

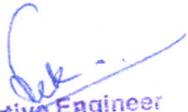

 Executive Engineer
 EHY Projects Division-I
 MSETCL, Nagpur.


 Dy. Conservator of Forests
 Bramhapuri Forest Division, Bramhapuri

220 K.V. UMRED TO NAGBHID EHV TRANSMISSION LINE

Total Expenditure on the Scheme

1	Length of Transmission Line	-	835 Meter
2	Total affected forest area in Bramhapuri Forest Division	-	2.998 Ha.
3	Area of 3m-strip belt under The transmission Line for strip plantation	-	0.2505 Ha.
4	No. of units to be tackled	-	2.38 Nos.
5	Cost of Plantation of Unit strip Belt of 350 m x 3 m i.e. 0.105 ha.	-	104179
6	Planting cost of Plantation	-	124143
7	Maintenance Cost of Plantation		
	i) IInd year	-	33999
	ii) IIIrd year	-	21831
	iii) IVth year to Xth year	-	63792
	Total Cost of Plantation for 10 year (6+7)	-	243765
	Cost of Plantation per Hectare	-	973113
	Cost per plant Rs.	-	708


Executive Engineer
EHV Projects Division-I
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri

**The following species are suggested for Multi-tier Strip
Planting**

Dwarf Species

<u>Dwarf Species</u>	-	<u>Botanical Name</u>
1) Aonla	-	Emblica officinalis
2) Sitaphal	-	Anona spumosa

Shrub Species

3) Chandrajyot	-	Jatropha curcas
4) Vavding	-	Embelia ribes
5) Ashwa gandha	-	Withania somnifera
6) Karvanda	-	Carissa spinarum
7) Agave	-	agave sislana
8) Kuda	-	Holarrhena anitidysenterica

Herb Species

9) Shatavari	-	Asparagus racemosus
10) Bhuineem	-	Swertia augustifolia
11) Tikhadi	-	Cymbopogon martini


Executive Engineer
EHV Projects Division-I
MSETCL, Nagpur.


Dy. Conservator of Forests
Bramhapuri Forest Division, Bramhapuri